Feasibility of the Nordic pharmaceutical pricing and reimbursement system for Iraq

Norway as a case

Ashwak Kazem Hamza

Master thesis in Social Pharmacy
School of Pharmacy
Faculty of Mathematics and Natural Sciences

UNIVERSITY OF OSLO
February 2015

Feasibility of the Nordic pharmaceutical pricing and reimbursement system for Iraq

Norway as a case

Ashwak Kazem Hamza

Master thesis in Social Pharmacy

Conducted at:

Department of Social Pharmacy, School of Pharmacy, Faculty of Mathematics and Natural Sciences, University of Oslo

Supervisor:

Associate Professor Ingunn Björnsdottir, Department of Pharmacy, University of Oslo

and

PhD candidate Karin Svensberg, Department of Pharmacy, University of Oslo

UNIVERSITY OF OSLO
February 2015


TO MAKE DREAMS REAL,
FIRST YOU HAVE TO
HAVE THEM

Foreword

This master thesis was conducted at the department of Social Pharmacy, Faculty of Mathematics and Natural Sciences, School of Pharmacy, University of Oslo in the period Mars 2014 to February 2015.

I would like to give my eternal gratitude to my supervisors Ingunn Björnsdottir and Karin Svensberg for a very good guidance and close supervision during my research, as well as great tips and advices.

Moreover, I would like to thank my informants for participating in spite of the difficulties.

I would also like to express my gratitude to the insider pharmacist who helped me with the collection of data and pictures from Iraq.

I also thank .Aitor Yraola for language advice.

I would also like to express my deepest gratitude to my four lovely kids who have been there for me and kept my courage up in difficult times.

Abstract

Background and Introduction: After many years of war, sanctions and occupation, Iraq health services and pharmaceutical system is struggling to improve. National efforts are needed to develop the current health care system. A feasibility study might be helpful for learning from other health care models in the world. The choice of the topic was influenced by the concept of the rational use of pharmaceuticals in general. The background for selecting the Nordic pharmaceutical model in this study was due to of its unique welfare focus. There could be other model options but because of the current location of the researcher coupled with a recent description of the Nordic model as a next “supermodel” in the world, the Nordic countries seem like an appropriate choice.

Purpose: The purpose of this study is to map, from the pharmacist’s point of view, the possible feasibility of the Nordic pharmaceutical pricing and reimbursement system as a model for the pharmaceutical system in Iraq. Further to describe the current Iraqi pricing system and the current payment system for pharmaceuticals, including a description of the need for modernization and rebuilding of the pharmaceutical policy in Iraq. The Nordic countries pharmaceutical pricing and reimbursement model specifically focused on in this study is Norway.

Methods: Qualitative methods and a case study were the main methods, after a literature review on the theme gave limited yield. Eleven semi-structured qualitative interviews with pharmacists were conducted and data was collected about diabetes treatment in Iraq as compared to Norway as a case to exemplify differences in availability and affordability of medications in these countries. Informants were from both Iraq and Norway. Iraqi pharmacists provided data for the Iraqi part of the case study. The data from the qualitative interviews was analyzed by using the program Hyper Research and, meaning condensation was used in the analysis of the interviews, whereas the case study is a simple comparison of publicly accessible pricing and reimbursement information from Norway to unpublished information from Iraq, in the absence of published data on the mapped variables.

Results: The results from the literature research show that the literature on pricing and reimbursement of pharmaceuticals in Iraq was meagre. The results from the interviews confirmed that restructuring and reforming to increase the availability of medications was needed in Iraq. A general reimbursement of pharmaceuticals could benefit Iraqi patient but the system would need adaptation to the national requirement and patients' ability to pay. Finally, the diabetes data analysis showed the lower quality of diabetes treatment in Iraq as compared to Norway.

Discussion and conclusion: This study explores the requirements of development in form of reimbursement in both private and public sector. The conclusion of the feasibility study of the Nordic pricing and reimbursement model is that in order to implement a Nordic model, an adaptation to the national characteristics of the users is needed. The Nordic model does not need to be completely copied to learn from it, rather some adaptation of the model is required. Further studies are needed to create a basis for implementing a general pricing and reimbursement model in Iraq. For example the prioritizing of resources in the pharmaceutical sector of Iraq need to be further explored. This is to support the Iraqi patients in both public and private sector to get better availability and affordability of medications.

Keywords:
Pharmaceutical reimbursement, pharmaceutical pricing, feasibility, Nordic, Iraq, Norway, pharmaceutical policy, affordability

Sammendrag

Bakgrunn og Innledning: Etter mange år med krig, sanksjoner og okkupasjoner, sliter Iraks helsetjeneste og farmasøytiske system med å forbedres. Nasjonal innsats for å utvikle det nåværende helsevesenet er nødvendig. En gjennomførbarhetsstudie kan være nyttig for å lære av andre helsetjenestemodeller i verden. Valget av tema var påvirket av rasjonell bruk av legemidler generelt. Bakgrunnen for å velge den nordiske farmasøytiske modellen i denne studien var på grunnlag av den nordiske modellens unike velferdsfokus. Det kan være en annen modell for andre alternativer, men på grunn av den nåværende plasseringen av forskeren, kombinert med en nylig beskrivelse av den nordiske modellen som en neste "supermodell" i verden, virker Norden som et passende valg.

Hensikt: Hensikten med denne studien er å kartlegge, fra farmasøytenes synspunkt, den mulige gjennomførbarheten av nordiske legemiddelpriser og det nordiske refusjonssystemet, som en modell for det farmasøytiske systemet i Irak. Samt å ytterligere beskrive dagens irakiske prissystem og betalingssystem for legemidler, inkludert en beskrivelse av behovet for modernisering og endring av den farmasøytiske politikken i Irak. Den Nordiske farmasøytiske prising og refusjonsmodell fokuserer spesielt på Norge i denne studien.

Metoder: Kvalitative metoder og en sakstudie ble én av de sentrale metodene, siden litteraturgjennomgang på temaet ga begrenset utbytte. Elleve semi-strukturerte, kvalitative intervjuer med farmasøyter ble gjennomført, og data ble samlet inn om diabetesbehandling i Irak i forhold til Norge, for å eksemplifisere forskjeller i tilgjengelighet og kostnader på medisiner i disse landene. Informantene var fra både Irak og Norge. Irakiske farmasøyter ga data for den irakiske delen av sakstudien. Dataene fra de kvalitative intervjuene ble strukturert ved hjelp av programmet Hyper Research, en tilnærming AV BETYDNING AV EN KONDENS METODE som brukes i analysen av intervjuene. Sakstudiet er en enkel sammenligning av offentlig tilgjengelig prisings- og refusjonsinformasjon fra Norge med upublisert informasjon fra Irak, i fravær av publisert data på de kartlagte variablene.

Resultater: Resultatene fra litteraturforskningen viser at litteraturen om priser og refusjonen av legemidler i Irak var magre. Resultatene fra intervjuene bekreftet at omstilling og reformering, for å øke tilgjengeligheten av medisiner var nødvendig i Irak. En generell refusjon av legemidler kan være til nytte for irakiske pasienter, men systemet ville trenge tilpasning til det nasjonale kravet og pasientens evne til å betale. Diabetesdataanalysen viste lavere kvalitet på diabetesbehandlingen i Irak i forhold til Norge.

Diskusjon og konklusjon: Denne studien utforsker kravene til utvikling i form av refusjon, i både privat og offentlig sektor. Konklusjonen av gjennomførbarhetsstudien av den nordiske prisings- og refusjonsmodellen med tanke på å implementere en nordisk modell, er at en tilpasning til de nasjonale karakteristika hos brukerne er nødvendig. En kopi av den nordiske modellen er ikke essensiell, men å innføre modellen og foreta en tilpasning vil være å anbefale. Konklusjonene er at videre studier er nødvendig for å skape et grunnlag for å kunne implementere en generell pris- og refusjonsmodell i Irak. Det trengs for eksempel ytterligere utforskning av prioriteringen av ressurser i den farmasøytiske sektoren i Irak. Dette for å støtte irakiske pasienter, i både offentlig og privat sektor, for å få bedre tilgjengelighet og lavere kostnader på medisiner.

Contents table

Abbreviations

$ American Dollar

€ Euro

AD American Dollar

APIS Active pharmaceuticals ingredients

ATC International(Anatomical Therapeutic Chemical) classification system for pharmaceuticals.

BP The British Pharmacopeia, the official source of British pharmaceutical standards

CBI Community Based Insurance

CE Cost Effectiveness

CIA Central Intelligence Agency from USA

CP Cost of Pharmaceutical

DDD Defined Daily Dose

DKMA Danish Medicines agency

DoH Departments of Health (DoH) in Iraqi provincials

DP Deductible Price

EEA European Economic Area (EU-countries, Iceland, Lichtenstein and Norway)

EU The European Union

FinOHTA Finnish Office for Health Technology Assessment.

HE Health Expenditure

HELFO Helseøkonomiforvaltningen. The Norwegian Health Economics Administration

HOD Helse og Omsorg-department / The Ministry of Health and Care Services

HS Harmonized System, HS cods

HTA Health Technology Assessment

ID Iraqi Dinar

IMF International Monitory Fund

IMoH Iraqi Ministry of Health in Baghdad

KIMADIA the State Company For Marketing Drugs And Medical Appliances

KMCA Kurdistan Medical Control Agency (KMCA)

KMoH Kurdistan Ministry of health in Erbil

KRG Kurdistan Regional Guvernement (KRG)

LIS Legemiddelinnkjøpssamarbeidet / Norwegian Drug Procurement Cooperation

LUA Sales of variety OTC medicines outside pharmacies.

MA Market Authorization

MAH The Market Authorization Holder

MoH Ministry of health

MRA Medicine regulatory authorities

NCU National Currency Unit

NGOs Non-Governmental Organizations

NIS National Insurance Scheme

NMD Norsk Medicinal Depot

NOK Norwegian Krone

NoMA Norwegian Medicines Agency

NSD Data Protection Official for research (Personvernombudet for forskning)

NTUS The Nomenclature of Territorial Units for Statistics (municipalities)

NTUS the Nomenclature of Territorial Units for Statistics (municipalities) in Nordic countries, a classification of Nordic context

OECD Organization for European Economic Co-operation and Development

OPP Out-of-pocket payment

OTC Over the counter medications

PHIS Pharmaceutical Health Information System

POM Prescription Only Medicine

PPB Pharmaceutical Pricing Board

PPP Pharmacy Purchases Price

PRP Pharmacy Retail Price

Rp Reference Pricing

SBU Swedish Council on Technology Assessment in Health Care

UAE United Arab Emirates

UN United Nation

US United state

USAID United state agency and international development

WHO World Health Organization

Glossaries

A/B prescriptions: The pharmaceuticals (in prescription Group A or B) containing narcotic and / or psychotropic substances, such as strong painkillers, antianxiety, pharmaceuticals for sleep etc.

ATC-system: International (Anatomical Therapeutic Chemical) classification system for pharmaceuticals recommended by the World Health Organization (WHO).

Blue prescription: A prescription form for medicines reimbursed by National Insurance after approved rules. (T-resept in Norwegian)

Contribution scheme (Bidragordning in Norwegian): Benefit Scheme beyond reimbursement scheme. HELFO can make contributions to cover the cost of pharmaceuticals expenses not covered by blue prescription scheme.

Deductible: (Egenandel in Norwegian) the amount the patient must pay for medicines reimbursed by National Insurance (reimbursement system)

Defined Daily Dose (DDD): It is a unit used in the estimation of pharmaceuticals consumption for international comparisons and use over time. The estimated average daily dose used on its main indication for an adult

Dirty Job: In Iraq, the word dirty job used to describe the misuse of the public system and the illegal sale of pharmaceuticals in general in addition to the other contracts between physicians and pharmaceutical companies, illegal sale of pharmaceuticals and intruders problem.

Exemption card: A card for health care you get when you have paid a certain amount of deductibles. When having an exemption card, you can avoid paying the deductibles for the remainder of the calendar year.

Harmonized system codes: The Harmonized Commodity Description and Coding System of tariff, an international standardized system of names and numbers to classify products (chapter 30 is pharmaceutical products)

Hospitals Pharmacies: A pharmacy in collocation with a hospital included in public health plans, and having pharmaceuticals supply to the hospital as its primary

H-prescription: Prescriptions of pharmaceuticals regional health authorities have responsibility for financing 100%.

Life expectancy at birth, (total years): This indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of birth were to stay the same throughout its life.

Medicine outlets: Distribution units for prescription pharmaceuticals under the control of a local pharmacy, often localized in daily supermarkets. Operation of medicine outlets are subject government regulations. Many medicine outlets also have a package commission scheme with the local pharmacy, and dispense packages of POM from the pharmacy to the final users. This concerns Norway

Pharmaceutical expenditure: covers the spending on prescription medicines and self –medication, often referred to OTC, for some countries. Other medical non-durables such as syringes, bandages, etc., may be included in the total. It is also includes pharmacists remuneration when it is separated from the price of medicines. Pharmaceuticals consumed in hospitals are excluded,(on average they account for around 15% of total pharmaceuticals includes wholesale and retail margins and value added tax(OECD, 2011) .

Reimbursement: Replacement or repayment / to pay back money to someone who has spent it for you or lost it because of you / to pay someone an amount of money equal to an amount that person has spent.

Regressive margin scheme: Margins (percent premium) is decreasing with increased purchase price.

KIMADIA: The Iraqi State Company for Marketing Drugs and Medical Appliances that is the only Iraqi company, which is specialized with regard to importing, storage and distributing of pharmaceuticals and Medical appliances and equipment's for the public sector institutions in Iraq and Kurdistan (including general hospitals, clinics and public health centers),established in 1964.

FarmaPro: advanced software program for pharmacy retailers in Norway. It contains information for pharmaceuticals management, re-ordering, stock management, reports of sales and purchase and the pharmacy communication with other national actors and authorities. It generates and sends automated emails / text messages to preferred pharmaceutical suppliers whenever stock levels fall below predefined level

List of tables

List of figures

List of appendix

Prologue

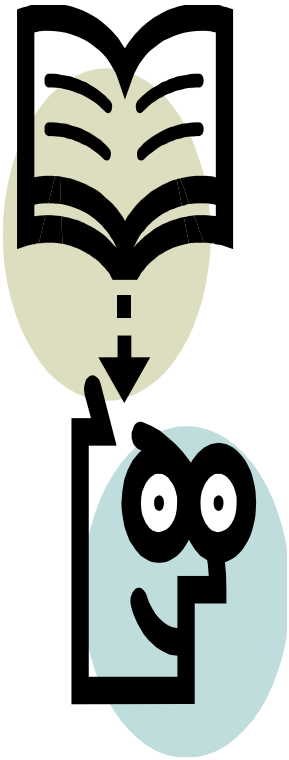
To start with, I want to explain that I have just started my career as a pharmacist in Norway, but I am an experienced one in my home country Iraq. There, I worked in different sectors in the health care system in many branches such as Manufacturing, Hospitals, Regulation, Marketing and Community pharmacy. This was parallel to my job as a pharmacist in my own community pharmacy. When I was in Iraq, medicines deficiency and low quality health care system was a part of my private life. I lost my mother early because of Diabetes type 2 and many of my people have chronic diseases and depend on lifesaving medicines and treatment such as Insulin, asthma medicament's and anti-cancer therapy that can be very expensive to most of the patients in Iraq. The bad pharmaceutical system there is one of the most important factors to make simple chronic diseases a source of mortality in Iraq such as Diabetes type 2 and Diabetes type 1 among young people. In addition to many complications because of such type diseases and bad health care service such as incontinence problems with the old aging people and cancer patients etc.

When I came to Norway, I started thinking about the difference between a patient with a chronic disease who lives in Norway and the one who lives in Iraq. Especially after my young son's disease, He has Diabetes type 1 since 2009. I have been influenced personally by the economic support of the pharmaceutical system in Norway, especially, when my son received treatment for diabetes type 1 by the impressive reimbursement system and the blue prescription scheme.

All this has motivated me to write my master's thesis and to learn more about the differences between the countries pharmaceutical systems, and what can be helpful to Iraq to get better future in the pharmaceutical area. The topic of my thesis was to explore the feasibility of Nordic pricing and reimbursement system for Iraq.

The main object is to describe and to compare pharmaceutical payment system including reimbursement and regulation of pharmaceutical prices in Nordic and in Iraq. Further to raise a question about whether the Nordic pharmaceuticals' model

can be feasible in Iraq or not? In addition to that, I want to explore what consequences each system could have on both the pharmacy selling behavior and the patients in Nordic and in Iraq. What is included in the pharmacy's margin? How is the pharmacy margin decided in these countries?



1 Introduction

1.1 Background for the choice of topic

After decades of war, sanctions and occupation, Iraq health services and system are struggling to improve. National development plans are needed to support the health care system. Currently, there is a need for feasibility studies based on comparisons with other health care models in the world. Generally health care restructuring in Iraq is a major subject now for many health professionals. Any efforts of reform or restructuring must be realistic and practical according to Iraqi culture, but the main and the important target is to change from bad quality, even though free government health services, to high quality and well organized system.

The background of the choice of the topic depended on the definition of rational use of drugs and the good pharmacy practice (GPP), sometimes the most appropriate therapy does not include drugs. When it does the rational use of drugs demands that the appropriate drug be prescribed, that it be available at the right time at a price people can afford, that it be available at the right time, that it be dispensed correctly and it be taken in the right dose at the right intervals and for the right length of time. The appropriate drug must be effective, and of acceptable quality and safety (WHO, 2014a).

A good pharmacy service is in place when pharmaceuticals are provided safely, in sufficient amounts, and with enough good quality in such a way that everyone in the population who needs the pharmaceutical receives it when they need it (Karin Wiedenmayer, 2006). It is very important to make sure that the pharmaceutical supply to the patients works optimally and the pharmacy sector is able to offer all pharmaceuticals and services with security, like in the Nordic countries much has been written about the need to improve and develop the pharmaceuticals policy in Iraq, and a new study from Kurdistan confirmed this and showed that there is an urgent need to improve the future health system (Tawfik-Shukor & Khoshnaw, 2010b). A comparison study is needed to help the Iraqi society to further develop the

pharmaceuticals pricing and payment system. The Nordic model could be an ideal example to compare to and to learn from. There are many efforts through meetings and workshops in local health care institutions in Iraq now toward the national development plan, especially in the health care system and pharmaceuticals policy(WHO, 2014b).

Nowadays, many countries like to compare themselves with other countries, because of economic success or because of education level or because of differences in morbidity and mortality.

In the February 2013 issue of the “Economist” magazine, the model of governance adopted by Nordic countries was presented as the next “supermodel”, the magazine praised the Nordic countries for avoiding the extreme inequalities which had disturbed America, because it was a model that was able to balance the economic and the social needs of society (Economist, 2013). Therefore I chose the Nordic pharmaceutical model as a good model to compare Iraq with.

The topic choice could help to learn more and more about the positive sides in this part of the globe. Iraq played a big role in the early pharmacy history, the first pharmacy in the world was established in Baghdad in the early 800s (Kheir et al., 2008), whereas the first pharmacy in the Nordic countries was established in Copenhagen Denmark in 1427 and the first pharmacy in Norway was established in Bergen in 1595 (Flood, 1889).The development sometimes is fast and beneficial in one country while slower and less beneficial in another, even backwards. The country where the first pharmacy was established could now benefit from learning from countries that started the development centuries later.

1.2. Nordic Geography and Demography

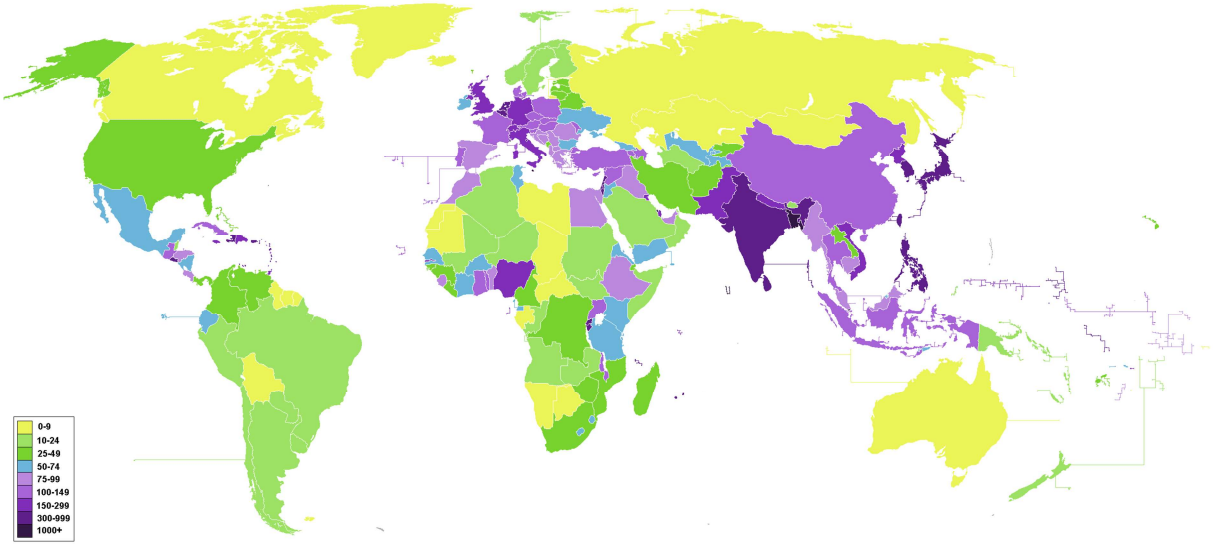
The Nordic region refers to the five Nordic countries: Denmark, Finland, Iceland, Norway and Sweden. The Nordic countries are located in the northern part of Europe and in the North Atlantic (see figure 1). The total population was close to 25 Million in 2013 (see table 1) of which the smallest country is Iceland. The Nordic countries have one of the lowest population densities in the world. The mainland Denmark has the highest population density in the Nordic countries with 130 people per km^2 (see figure 2). The Nordic countries have many similarities in their way of life, history, language and social structure. Politically, the Nordic countries do not form a separate entity, but they co-operate in the Nordic Council (Library, 2014).

Each country with-in Nordic area has its own administrative structure which is the result of its organizational history including a number of often quite recent reforms at different scales (Grunfelder et al., 2014). Taxes have an important role in the local welfare system which are relatively high in the region (Norden, 2014a).

Figure 1. Map of the Nordic countries.

Source : (Colourbox, 2014).
Source: Free licensed maps from (wikimedia, 2004).

Figure 2. Map shows the populations density in 2012.



Source : Free licensed maps from (Library, 2012).

The table below (see table 1) shows the demographic features for Nordic countries in compared with the same demographic feature to Iraq to make it easy to the reader to get idea about the countries included in this study

Table 1. Demographic features for Nordic countries in compared with Iraq demographic features

Country	Area [a)] in Km^2	Total population in 2013 Million	Health expenditure indicators GDP/Capita [d)]	Pharmacists rate /10000 population [b)]	Life expectancy at birth /years	DM Life expectancy rankings [c)]	Population % of total death by DM [c)]
Iraq	438,317	34207	3,900 / 4.9%[1]	2,2	70,85	9 [e)]	n.a [2]
Denmark	43,094	5,556,452	37.800	3,9	78.78	9	3.6%
Iceland	103,000	315,281	38.500	0,44	71.25	14	1.7%
Finland	338,145	5,222,114	35.900	3,1	79.41	18	1.3
Norway	323,802	4 722 701	55.400	2,6	80.32	13	2.27%
Swedish	40,900	9 119 423	40.900	not available	81.18	10	2.03%

a)Source: (Nationsonline, 2014).
b) Source:(FIP, 2012).
c)Source: (worldlifeexpectancy, 2014).
d) Data are in 2013 US dollars.
e) Source:(WHO, 2011) .

[1] Government budget as a %

1.3 Characteristics of Nordic model

1.3.1 The Nordic Co-operation

The Nordic co-operation is one of the most extensive forms of cooperation between countries in a region, including Denmark, Finland, Iceland, Norway and Sweden. This type of collaboration plays an important role in European and International development (Haagensen, 2013).The Nordic cooperation facilitates the sharing of experiences across the national borders and helps to give approximately the same welfare model (Norden, 2014a).

Politically, the Nordic Council has 20 members from each country of the five countries. The official Nordic co-operation is financed principally with tax revenues from Denmark, Finland, Iceland, Norway and Sweden. There is a special distribution plan that specifies how much each country will contribute to the Nordic budget to run co-operation in the Nordic Council, The Nordic Council of Ministers and in the Nordic institutions, which receive money from the Nordic budget. This Nordic co-operation costs no more than about NOK 47 per head in the Nordic countries. This is cheap multi international cooperation .This co-operation can give the region strong support and force (Norden, 2014b).

1.3.2 Main differences and similarities between the countries

The Nordic countries share common values of equal opportunities, social solidarity and security for all its inhabitants, but different systems in terms of how the welfare policies are organized. In reality, the Nordic welfare provision is both more diverse and more complex, however the differences between the systems enable the Nordic countries to learn from and be inspired by each other’s experiences. However, on an overall level and compared to other regions they are more or less homogeneous. The Nordic welfare model is based on innovation. They tend to regenerate and renew the systems/or the schemes according to their need, and its flexible i.e. it is especially

prepared to meet new challenges and this gave the region(Nordic region)the ability to balance strong welfare schemes.

The Nordic welfare model is one of the most successful according to OECD's (Organization for European Economic Co-operation and Development) ranking and classifications of countries economy and health care system. The Nordic region has the potential to be leader in the development of innovative solutions in the world especially in health and social sectors (Norden, 2014a).There will be a range of differences between Nordic countries in their design and applications of health policy, enforcement measures and mechanisms (Magnussen, Vrangbæk, & Saltman, 2009).

1.4 Pricing and reimbursement systems in the European Union (EU)

Generally, effective and new treatments are more expensive for the society today compared to previous pharmaceutical innovations. This is acceptable to certain degrees when new treatments add additional life-years and/or quality to life and/or if the additional cost have saving effects on other health costs in the system. The EU member states have different reimbursement systems (payment by a third part and not only by the patient) of pharmaceuticals for its inhabitants for example the extent of reimbursable pharmaceuticals, the size of reimbursement, and the source of coverage (Martikainen & Rajaniemi, 2002).

To control the increasing cost of e.g. pharmaceuticals, in Europe the first institution or bodies for decision making for the health care evaluation were established in France and Spain in 1980s and Sweden in 1987. Many EU countries support these efforts by investing resources in Health Technology Assessment (HTA) to develop the health care system. A HTA is a knowledge summary based on a systematic summary of research concerning effect and safety and assessment of the consequences usually in terms of health economics of the new technology (García-Altés, Ondategui-Parra, & Neumann, 2004).

The pharmaceutical pricing and reimbursement systems established by EU member states are usually complex. Each country uses different schemes and policies, adapted to its own economic and health needs. These national systems are regularly revised or adjusted in order to consider the political priorities, market evolutions and patient needs. The variety of health care and social security systems has an effect on many national and international actors, including the pharmaceuticals industry, wholesalers, pharmacists, doctors, health insurance and mostly patients (Commission, 2013).

The pricing of pharmaceuticals in many EU states members have the same principle. The price compared with the price of the same product in the other European countries in European economic area. For example, in the Netherland, the price depends on the average price in France, Germany and Belgium and in Ireland; the factory price must not be more than the lowest price in United Kingdom.

In general, there are many criteria in reimbursement systems. The pricing of pharmaceuticals is the most important one, which influence the reimbursement process in EU states members. In these states except United Kingdom and Germany, the pharmaceutical is required to have reasonable price, and this will vary from country to country, but in the most of EU, the common method to decide the pharmaceutical reimbursement is depending on health economics studies, which give a measurement and comparison of costs and benefit of different treatment alternatives. The reference price system is mostly used and it will be described in details later in the text.

Other criteria, which can affect the reimbursement process, are the renegotiation with pharmaceutical companies, the type of treatment, if its short periods of self-care use the effectiveness and the cost. The less effective pharmaceutical would be removed from the reimbursement list. Many EU countries defined the reimbursement of new expensive pharmaceuticals to restrict the reimbursement to the patients who will benefit most from treatment.

In some EU countries, only the hospitals can supply patients with expensive pharmaceuticals. Some have difference system in which the pharmaceuticals would

be reimbursed only if a physician working for the system concerned has prescribed it. In others it will be reimbursed only if the doctor prescribing it is working with the public health care system such as in Spain (Martikainen & Rajaniemi, 2002). Generally the principles of the reimbursement systems in Europe can be described in eight points (Martikainen & Rajaniemi, 2002):

1. The proportion of drug cost payable by patient.
2. Basis of reimbursement calculation.
3. The severity of illness or effectiveness of medicinal product.
4. Reimbursement to children different from reimbursement to adults.
5. Patient's wealth.
6. Special patients' groups system.
7. Ceiling set to patient's payments.
8. Reference price system.

The methods of pharmaceuticals reimbursement and pricing in EU countries are different. According to national health care policy but basically to get an effective reimbursement ,all the methods must be transparent, flexible to ensure the rapid access to the new treatment ,strong enough to evaluate the clinical benefit and economic impact, and it's easy to use by different actors (Kanavos, Vandoros, Irwin, Nicod, & Casson, 2011).

1.4.1 Pharmacy market

The EU member countries plus Norway and Iceland are, as regards the retail distribution of pharmaceuticals, generally divided into two groups of countries: the "deregulated" countries such as England, Ireland and the Netherlands that have been liberals for decades with further initiatives for more competition in rather recent times, whereas the regulated community pharmacy systems of Norway and Sweden were liberalized in 2001 and 2009 respectively. All the regulated countries surveyed (Austria, Denmark, Finland and Spain) have statutory establishment rules ,usually based on demographic and geographic criteria, allow only pharmacist to be the (key) owners of community pharmacy and do not permit the forming of pharmacy chains (Vogler et al., 2012).

1.5 The Nordic pharmaceutical pricing and inclusion of new medications in their reimbursement system

First a brief introduction is given. Thereafter, the Norwegian system will be described in depth and at the end; a minor comparison is done with the other countries.

The Nordics countries have very developed HTA systems. In this study, the focus is only on the evaluation of pharmaceuticals. All the Nordics countries have specific and professional HTA bodies, which have different roles and responsibilities (see table 2). HTA bodies, which have responsibility about the reimbursement and pricing, are different from country to country. All the five countries have a specific institutions and advisory bodies (Sorenson, Drummond, & Kanavos, 2008).The Nordic countries have dedicated HTA bodies that have desperate roles and responsibilities (see table 2). This groups of professionals involved in reimbursement and pricing decision including physicians ,health economists , pharmacists , patients groups representatives(patients organizations) and manufacturers (Sorenson et al., 2008).

Table 2. Table1 Institutions and advisory bodies responsible for HTA activities (Decision maker).

Country	HTA bodies	Size of reimbursement by third part	Governance of topic selection	Criteria for topic selection & assessment
Denmark	Reimbursement committee\Danish Center for Evaluation and Health Technology Assessment (CEMTV)	The majority of POM are reimbursed automatically OTC pharmaceutical reimbursed reimbursed for specific diseases or to pensioners in general.	DKMA advised by the reimbursement committee	Therapeutic value of the pharmaceutical and at increasing frequency ,its financial applications and health economic evaluation
Finland	Pharmaceutical Pricing Board(PPB)/Finnish Office for Health Technology Assessment (FinOHTA)	Basic reimbursement 42% Lower special reimbursement 72% Higher special reimbursement 100% Additional reimbursement after reaching annual limit to co-payments Co-payment depending on reimbursement category (58%/28%/€3 per medicine /€1,50 per medicine)	FinOHTA and STAKES(National Research and Development Center for Welfare and Health)	Therapeutic benefit ,CE, budget impact ,public health impact ,service requirements and social /legal/ethical consideration (FinOHTA)
Iceland	Ministry of health (MoH) and Sjukratryggingar (SI)	The General reimbursement size classified according to ATC classification (coding) into: * = Fully reimbursed, B = low co-payment for children, elderly and disabled, E = general copayment and 0 = no reimbursement (for example antibiotics, contraceptives). Individual reimbursement based on applications	National reimbursement codes set by the MoH, paid by the national insurance	The reimbursement decision depending on the disease area and cost of pharmaceuticals. Restrictions can be imposed according to indication ,severity of illness and patient population OTC is unregulated

Norway	Pharmaceutical Pricing Board(PPB)/Norwegian Medicines Agency (NoMA)	National Reimbursement Codes Green box: include preapproved prescriptions. Yellow box: Include preapproved prescriptions subject to particular conditions. Dark yellow box: include individual application, approval by HELFO subject to particular conditions.	NoMA in consultation with National Advisory Committee for Drug Reimbursement y	The Norwegian reimbursement system characterized as disease and consumption based
Sweden	The Dental and Pharmaceutical Benefits Agency, TLV Swedish Council on Technology Assessment in Health Care(SBU)	Reimbursement depends on yes /no decision for inclusion on positive list. In exceptions conditional coverage given for particular applications or conditions.	Ministry of health and Social Affairs ,Swedish Parliament, various health care organizations, health experts and SBU	Therapeutic benefit, patient benefit, CE(cost effectiveness),availability of therapeutic alternatives

Source of the table above: Compiled by the author, based on the survey done in the study Impact of pharmacy deregulation and regulation in EU, and adding information from Martikainen & Rajaniemi, 2002; Sorenson et al., 2008; WHOCC, 2011.(Lyfjaverðskrá, 2015) and (Sjúkratryggingar Islands, 2015)

1.6 Pharmaceutical reimbursement in the Nordic countries

The Nordic health care system is based on a principle of free and equal access for all citizens (Festøy & Yu, 2011),and the pharmaceutical reimbursement system was one of the most important tools to realize this principle. Generally, the health care system in Nordic countries has more similarities than differences and in all Nordic countries, more than 80% funding from public sources. In Iceland, the central government is providing the most of the health service funding while the county council in Denmark,

Norway and Sweden are central. In Finland, municipalities are the provider of health care services (Kristiansen & Pedersen, 2000).

Most pharmaceuticals are reimbursed by the state, funded by the comprehensive tax systems, and the patient co-pay or pay some medications by themselves (types of medications and amount of co-payment varies between the Nordic countries). One of the goals, which some of the Nordic countries intended to achieve through the deregulation of pharmacy sector, was to increase the accessibility of pharmaceuticals, and to keep the quality of the pharmacy service in high level. This is initially due to the good qualification of pharmacists, a professional self-understanding as a part of the health care system and quality standards established by the pharmacy owner. On the other hand ,the goal of the deregulation in the pharmacy sector is usually to increase the accessibility of pharmaceuticals and to reduce of the price of (OTC) medicines and being part of the overall health care system ,the pharmacy sector is not typical market and should therefore not be left to market force alone (Vogler et al., 2012).

1.7 Norwegian regulatory framework and system organization

The essential national laws regulating the pharmaceutical market in Norway are the pharmacy law which regulate the rules for pharmacy and the health care professional Law 2000−06−02 nr 39 (Lovdata, 2014b) which regulates the health care professionals duties and rights, and the pharmaceutical law which regulate the pharmaceuticals market , Law nr 1992−12−04 number 132 (Lovdata, 2014a).

Norway is involved in market authorization (MA) of pharmaceuticals through EEA agreement manufacturer is issued with a marketing authorization i.e. permission to sell the medicine (Legemiddelverket, 2014b).

According to the pharmaceutical law, the most important goal for Norwegian pharmaceutical policy is:

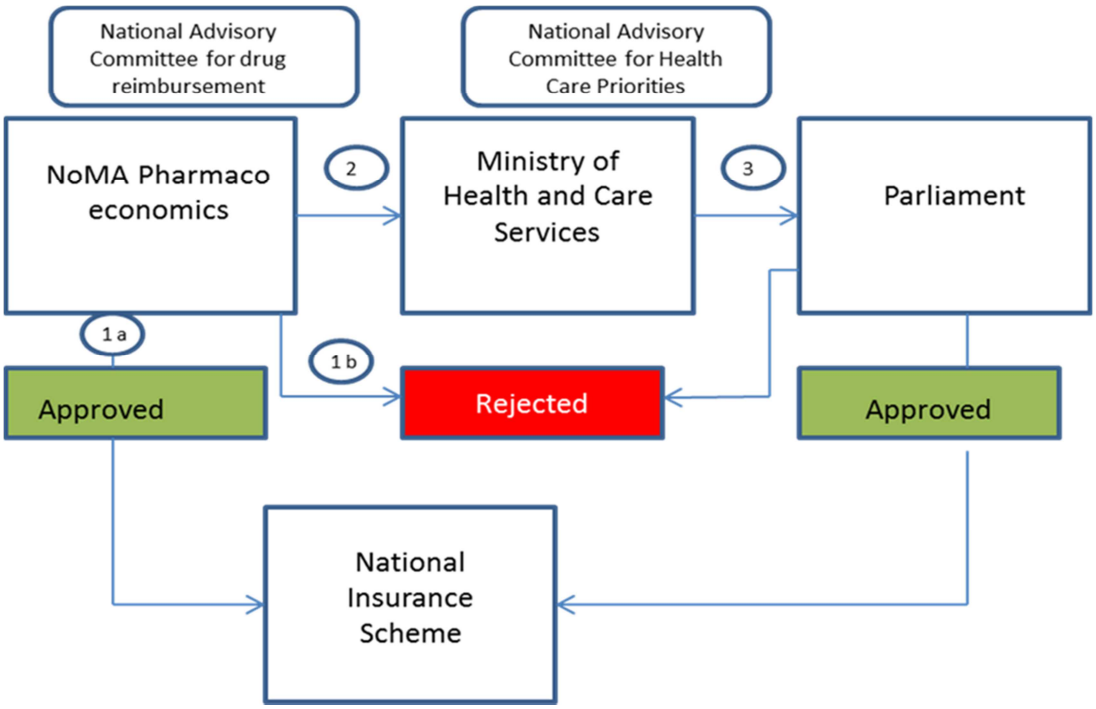
1. To obtain suitable/rationale use of pharmaceuticals.

2. Medicinal products shall be used correctly in both medical and economic terms.

3. Patients shall have secure access to effective medicinal products, regardless of their ability to pay for them and pharmaceuticals shall have the lowest possible price (Festøy & Yu, 2011).

The figure below (se figure 3) shows the decision maker process and the authorities in this area.

Figure 3. Norway - The decision-making process for reimbursement of pharmaceuticals.



.

NoMA = Norwegian Medicines Agency

1a = approve, 1b = reject, 2 = pass to the Ministry of Health and Care Services (HOD), 3 = bring the case before Parliament in the form a Budget Bill

Source: NoMA 2011

Source: Reprinted with permission from author Sabin Volger (Festøy & Yu, 2011) .

1.8 The pharmaceutical system in Norway

Norwegian Medicines Agency (NoMA) uses the national system for the introduction of new pharmaceuticals within the specialist health service. Norway is involved in market authorization (MA) through EEA agreement. Manufacturers were issued with a marketing authorization i.e. permission to sell the medicine (Legemiddelverket, 2014b).

In Norway, the administrative organ for pharmaceutical is the NoMA. NoMA has direct supervision of production, clinical trial and marketing of pharmaceuticals, the supply chain, regulation of prices and trade conditions of pharmacies. NoMA was established in 2001.The ministry of health and care services (Helse og Omsorg-department, HOD) has the legislative authority. NoMA is subordinate to HOD. NoMA is responsible for pharmaceutical marketing authorization, classification, pricing, reimbursement and providing information on medicines to health care professionals and the public.

HELFO (The Norwegian Health Economics Administration) managed the reimbursement for the individual patient for pharmaceuticals outside the general reimbursement or indications not covered within the general reimbursement schemes. All major international pharmaceutical companies are represented in Norway. In Norway, there are two sources of pharmaceutical import;
1. Countries inside the European Economic Area (EEA)
2. Countries outside the European Economic Area (EEA)
The first group import are all the wholesalers have permission to import from them but the second area (from outside EEA) this type of pharmaceuticals import needs additional special license from NoMA (Legemiddelverket, 2014b).

1.8.1 Pricing and margins of pharmaceuticals in Norway

NoMA is responsible for the organization of pricing. NOMA is in charge of pricing decision for individual medicines and sets the more specific guidelines for price

determination. NoMA sets maximum prices for all prescription only medicines (POM) at the pharmacy purchasing price level (PPP). Differences are made between new pharmaceuticals (Norway use the international reference pricing scheme) without generic competition and generics (here after a model called the stepped price model).

However, OTCs and veterinary pharmaceuticals have free pricing. Each POM is given maximum prices by the NoMA. NoMA also sets maximum prices for all POM at the pharmacy purchases price PPP-level. The maximum price is adjusted in accordance to external international reference pricing. Generally the Norwegian maximum prices are based on the average of the three lowest PPP in Sweden, Finland, Denmark, Germany, United Kingdom, Nederland, Austria, Belgium and Ireland (Festøy & Yu, 2011).

The Market Authorization Holder (MAH) has to apply for a maximum price before entering the market. The maximum prices have been re-evaluated yearly by NoMA. The pharmacy retail price is regulated by a maximum pharmacy mark-up set by NoMA. This system is regulated by law, in the Norwegian act on medicinal products (NoMA, 2014b).

The maximum price (PPP) +pharmacy Mark-up add= the maximum retail price (PRP)

The pharmacy margins in Norway are regulated by NoMA according to the regulation on medicinal products §12-13. There is maximum pharmacy margins applied to all price regulated medicines including the reimbursed and non-reimbursed pharmaceuticals. The pharmacy margins scheme is regressive. The maximum margins to POM which have purchase price from 200 NOK \24€\ 29$ have maximum margin 3% in 2014, the POM with purchase price 0-200 NOK have maximum margin in pharmacy 7% only in 2014, the scheme is regressive. The fixed margin per package in 2014 is 25 NOK and 10 NOK \1,2 € for addictive medicine and narcotic be added in pharmacy (Legemiddelverket, 2014a).

1.8.2 The stepped price model

For generics there is a special model the stepped price model (trinnpris modellen) it was introduced on 2005 to decrease the cost of the national insurance scheme and patients related to the use of generic medicines. The pharmaceuticals prices are reduced systematically by pre-defined rates. The reduction occurs after the pharmaceutical product has lost patent production and has exposed to generic competition (Festøy & Yu, 2011).

The stepped price is the maximum price reimbursed by the national insurance scheme or the price the patients pay for a pharmaceutical product that is associated in the reimbursement scheme system. NoMA publishes a list of generic substances and current prices (NoMA, 2014b).

The maximum reimbursement price for a generic substance is defined as a percentage of the maximum retail price (PRP) of the original pharmaceutical product at the time was opened to generic competition. Three steps minimize the reimbursement price at the first 12 months of generic competition. The reduction rate depends on the yearly sale of the product:

- The first price cut happens when generic competition apiarists about 35% of the original price.
- The second price cut is preceded six months after generic competition has occurred 59%-81%.
- The third step is viable 12 months or more after the time of the second step, 69%, 86% and 90%.

According to the changes in stepped price system, and the pharmacy mark-up scheme in 1st January 2014.This step price system also applies to the parallel pharmaceuticals import[3] (Legemiddelverket, 2014a).
In Norway, the pharmaceutical product is delivered in both small and large packages; the pharmacy is obliged to deliver both small and large packages to a retail price

[3] It means that a pharmaceutical that has already Norwegian authorization, imported from a country within the European Economic Area other than the pharmaceutical company traditional channel

equal price to the stepped price. The wholesalers are obliged to offer the pharmacies medicines that enable them to fulfill these obligations (Festøy & Yu, 2011).

1.8.3 Reimbursement system in Norway

Reimbursement (payment by third part and not only by the patient) in Norway can generally be said to be based on two main fundaments:

1. Fundaments concerning medical needs and solidary in the population: everyone should have the same access to necessary medicines regardless of their ability to pay.
2. Fundaments concerning rationality: it should support rational and cost effective use of medicines as an instrument to ensure development in healthcare system.

Reimbursement is assorted only for “long-term” medication for chronic diseases, determined as more than three months of medication per year. It does not cover short term therapy such as antibiotics, antiviral, pain analgesics (see table 3).
OTC (Over the counter products) are in general exempt from reimbursement (Festøy & Yu, 2011).

The people in Norway cannot usually get expenses covered, but generally, there is a rule of thumb that that medicine must be: Marketed in Norway and
Prescription printed by doctor for POM.

Table 3. List of pharmaceuticals that have exempted from the general reimbursement scheme in Norway.

Contraceptives
Drugs for alzheimers disease
Drugs for bacterial infection
Drugs for prostate complains
Drugs for viral infection (antivirals)
Estrogens and testosterone preparations
Growth hormones
Medicinens for allergiens
Medicines for disinfection of skin
Medicines for fungal infections (antifungal)
Medicines for pain (the pain killer)
Medicines for smoking cessation
Prescription medicines and commodities addictive drugs
Tablets for erectile dysfunction (such as Cialis, Levitra, uprima, Viagra)
Vaccines
Vitamins and minerals

Source: (HELFO, 2014).

The general reimbursement scheme, insure that the patient can get part of the medicine cost, which are covered by the state when having severe and chronic diseases. This scheme includes the pre-approval pharmaceuticals. The pre-approval pharmaceuticals are described by NoMA in a list of all the items. In this pre-approval medicine list can be prescribed directly by the physician as a general reimbursed or (blue prescription). The pharmaceutical company with market authorization can apply for preapproved reimbursement (general reimbursement). For further information see(HELFO, 2014).

1.8.4 Reimbursement Schemes

The statutory framework for the reimbursement is the social service act and regulation on medicinal product (Festøy & Yu, 2011).
In Norway, there is no schedule 1 in reimbursement system.

-Schedule 2 (§ 2) Needs that the pharmaceutical has been assented for reimbursement by the authorities, be reimbursed automatically. (Pharmaceuticals on the reimbursement list, which cover specific diagnosis for long term more than three months treatment).
-Schedule 3a: (§ 3a) this schedule requires a formal application for each patient for pharmaceuticals other than those under schedule 2, 4 and 3b. For long-term treatment more than 3 months (individual reimbursement), HELFO is responsible.

-Schedule 3b (§ 3b) require a formal application for each patient. This schedule can be given to pharmaceuticals used to treat rare diseases and for long-term treatment (more than three months). Individual reimbursement is HELFO's responsibility.

-Schedule 4 (§ 4) given to pharmaceuticals used to treat severe communicable diseases, such as: tuberculosis, syphilis, HIV/AIDS). The reimbursement rate is 100% in this schedule (Festøy & Yu, 2011).

1.8.5 Reimbursement schemes to individual drug users.

The White Prescription

The pharmaceuticals prescribed or printed on white prescriptions must in principle be paid fully by the patients. The most common exceptions are certain drugs for certain diseases or certain patient groups, such as the pills to young girls some medicines to rheumatoid arthritis and pharmaceuticals to conscripts. But the Contributions scheme (Bidragsordning in Norwegian) can partially recover the cost of pharmaceuticals in some cases on white prescriptions, regardless of disease. This is called contribution scheme. It can be given contribution to costs of healthcare that would otherwise not

to be covered by the national insurance act or other laws. The Contributions scheme can give the patient 90% refund of expenses exceeding 1695,- NOK (2014) of pharmaceuticals on white prescriptions regardless of disease(HELFO, 2014).

Railway personnel

The patients who are members in the railways / train ways (in Norwegian Jernbanepersonalets) Health fund, spouse and children under 18 have the right to a 50% refund on a number of drugs on white prescriptions. Exceptions are drugs against obesity, hair loss, contraceptives, potency, and agents in smoking cessation and assisted reproduction. The patient must show case health card at the pharmacy

Military prescriptions

Conscripts are reimbursed expenses to a number of drugs certain conditions: The scheme also applies to civil, home guard, and civil defense. There is no user fee at the pharmacy when these requirements are met. In this scheme, the doctor writes out blue prescription regardless of whether the drug goes blue prescription or not and the reimbursement shall be “conscript”. Military doctor required to write the prescription. There are some pharmaceuticals which are not covered by this scheme: Nutrition supplement , vitamins and minerals, pharmaceuticals for potency, hair products cosmetic treatments (HELFO, 2014).

1.8.6 Reimbursement arrangements for some Pharmaceuticals on white prescriptions.

Contraceptives (P-prescriptions)

Girls between 16 and 19 years are covered 106 NOK for three months’ supply of contraceptives pill. Contraceptive patches, Depo-Provera and vaginal ring. If the products cost over 106 NOK, the young girl must pay it exceeds 106 NOK. The scheme applies from the month after the young girl turn 16 years on month before turning 20.

H prescriptions (health authority)

Prescriptions are white prescriptions in part costly medicines before were written in blue prescription applies TNF inhibitors, there are pharmaceuticals used for arthritis, ankylosing and psoriatic arthritis. From 2014 comes this scheme also some cancer drugs, drug user get covered 100% of the cost and the patient will not pay the deductible when the prescription is written out by a doctor on health authority or physician agreement with health trust.(Mostly prescriptions from special hospitals)(HELFO, 2014).

1.8.7 Exemption cart

The exemption cart (called Frikort in Norwegian) is a cart or a document ,the patient can get it when he paid a certain amount in users fees and when the patient get this type cart ,he don't need to pay any fee the remaining of the year. There are two types card and they apply different services;

The card for user fee group 1: This group covers approved user fees, physician, psychologist, in outpatient clinics and x-ray institutions, patient travel and pharmaceuticals and pharmaceutical appliance on blue prescription. The patients receive an exemption card automatically within three weeks once the patient has paid over 2185 NOK in deductibles in 2015.

The card for user fee group 2: This card approves for treatment by a physiotherapist, some forms of dental diseases, stays in rehabilitating clinics and the treatment arranged by Oslo University hospital - Rikshospitalet H. If the patient paying more than 2670 NOK in approved deductibles for such treatment by 2015, The patient intended to get an exemption card for the user fee group 2 (HELFO, 2014).

1.8.8 Wholesaler's re-payment

Wholesalers are regulated in the Norwegian act on medicinal products. Wholesalers are companies in Norway who carried out wholesaling business. To carry out wholesaling business in Norway, the company must obtain approval from NoMA (Legemiddelverket, 2014b).

There are three big wholesalers in Norway which providing all the pharmaceutical products to the market relating to the European pharmaceutical distribution companies ,each of these wholesalers have been completely integrate with their own pharmacy chain ,those wholesalers are :

1. Norsk Medicinal depot (NMD), which are owned by Celesio AG, with market share of 47%.
2. Apokjeden AS (Apotek 1 Gruppen AS), which are owned by Tamro OYJ with market share of 28%.
3. Boots Norge AS, which are owned by Alliance Boots Plc.

The wholesale margins are not regulated in Norway, but the average was 7% in 2010(NoMA, 2014a).

1.8.9 The pharmacy retailing

The retail business for pharmaceuticals in Norway encompasses pharmacies. Retailing in Norway is defined as distribution and sales of pharmaceuticals to the public including the health institutions and other users of pharmaceuticals. In Norway, the act on pharmacy requires two licenses, a license to own a pharmacy (Proprietors license/possessor license) and license to run the pharmacy. Only pharmacies or medicinal outlets (control by pharmacists) may carry out retailing of pharmaceuticals products, exception for pharmaceuticals intended for technical or scientific use, or non-medical use, for manufacturer's and certain non-prescription pharmaceuticals to be sold by other retails than pharmacies.

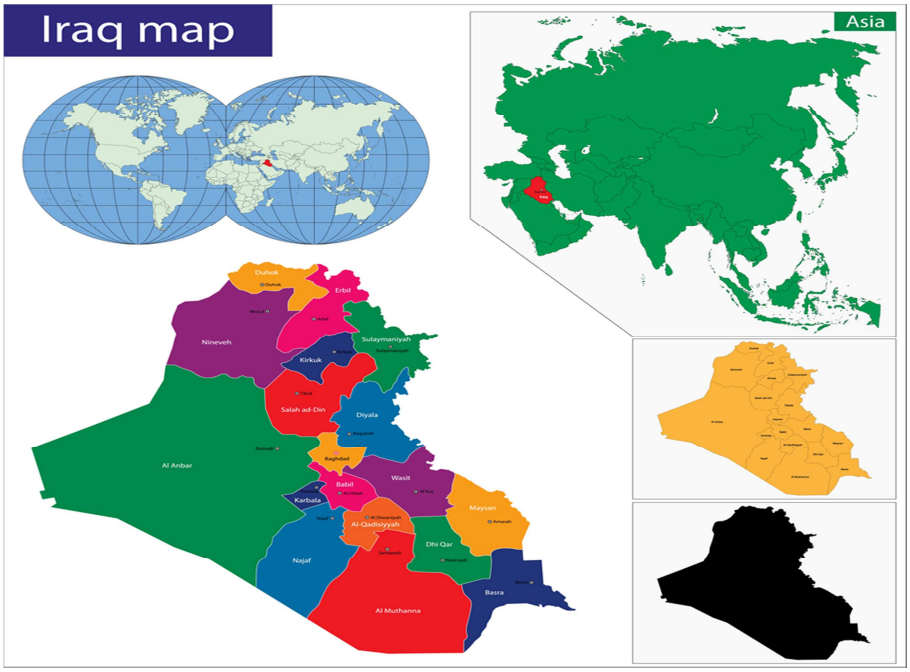
Retailing of pharmaceutical in Norway can be to the professional direct users such as physicians, dentists, and veterinary i.e. directly to the professional end users. NOMA is responsible for maximum price decision on POM. The agency evaluate and decide whether a pharmaceutical should be reimbursed by the national insurance scheme (Legemiddelverket, 2014b).

Now a description follows of the system in Iraq. This section is short as compared to the Nordic countries section because of the deficiency in published literature and the limited availability in literature search regarding the Iraqi pharmaceutical system and the pharmaceutical pricing policy.

1.9 Iraq geography and demography

In the 8th century AD, Iraq introduced the first privately owned community pharmacy in the world where the pharmacy first became independent of medicine. This start was in Baghdad the capital of Iraq (Kheir et al., 2008). Iraq is a Middle Eastern country with a population about 32 million. Arabic is the first language and Kurdish is the second official language of Iraq (se figure 4).

Figure 4. Map of Administrative division of Iraq and Iraq location.



Source: colure box, 2014

Iraq has the fifth largest proven oil reserves of any country (after Venezuela, Saudi Arabia, Canada and Iran), whereas Norway is number 24. The oil productions increased after the fall of Saddam Hussein in 2003. The oil is concentrated in Shia in the south and Kurdistan in the north, with Sunni regions to the west notably lacking in oil wealth(CIA, 2014).

1.9.1 Context remarks for the Iraqi crisis

The war situation is seriously severe in Iraq now and probably it's going to get worse before it gets better. An Iraqi author, quoted last year in the Independent, can

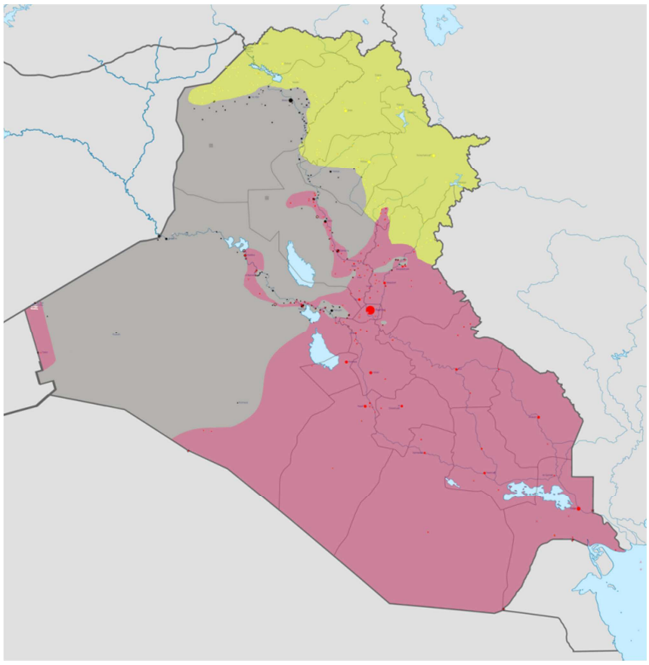
probably be said to speak for many Iraqi people: “When I read articles about the Iraqi crisis now on different websites, I get worried about many things in my mind, my past memories and my future in my country, especially when I read that” the old partition of the middle east is dead”(Independent, 2014). .

The current Iraq crisis started in early June, when a group of extreme terrorists who called themselves as “Islamic State of Iraq and Syria or Levant “(ISIS /ISIL) which occupied large part of Syria already and now the occupied a large part of the north of Iraq, including the major city of Mosul, but originally the conflict has roots in Iraq’s complicated history.Iraq’s three-way demographic divide is not the reason on to this crisis but it is a huge part of it.

In the map we can see three major group in Iraq, the largest are the Iraqi’s Shia (Shi’ism is a major branch of Islam), the Shia Arab are the main group there who live in south mostly. The second group are Sunni Arabs who live in the north and west Baghdad is mixed with Sunni and Shia. North (the far north) is Kurdistan. The ethnic Kurds are mostly Sunni but their ethnicity characterizes them and divides them from the Arab Sunni. Nowadays and after the war, the Shia majority dominates the Iraqi governments. The Sunni thought that they are underserved. The ISIS are the extremist Arab Sunni group that has taken over a major fraction of the country (se figure 5), which describe the Iraqi crisis in 2014.

The Kurds who suffered under Saddam Hussein have been encouraged to get advantage of the recent crisis to grant them greater autonomy in Kurdistan. The history of Iraq is known but the current crisis that affects my study.

Figure 5 Iraq crisis map.



Se the source down
The pink shaded area controlled by Iraqi government
The gray shaded area controlled by the Islamic State (IS, ISIS, ISIL)
The yellow shaded area controlled by Iraqi Kurds
Source:(Wikipedia, 2015).

In the map above (figure 5), ISIS appears to have handed control over to local Sunni groups. ISIS is originally supported and established by an Islamism group so extreme that they were kicked out of al-Qaida(Economist, 2014). The civilian casualties in Iraq have increased dramatically in June 10-12th 2014. ISIS captures Mosul and this crisis started following that event. The United Nations reported that the fighting in Iraq displaced over 1 million people or about 3% of the country's population and the other Sunnis who are under the control of ISIS are worried about how their life under ISIS would be. The civilians begin cooperating with Iraqi government to find a solution(UN, 2014).

All that influenced my research drastically.

1.9.2 The Kurdish region in Iraq

Kurds are ethnic groups that have their own language and culture that lives in minorities in Iraq, Syria, Turkey and Iran. They have been fighting for their own country for more than a century. They have taken autonomy for themselves in Iraqi Kurdistan region. Kurdistan Regional Government (KRG) is semi-autonomous and governs the three big provinces of Sulaymaniyah, Erbil and Duhok north for Baghdad. The Kurds have independent parliament, Prime Minister and president (Tawfik-Shukor & Khoshnaw, 2010b).

The Kurdistan region in Iraq has a big hope to be the best in health care. The Kurdistan patients are luckier now than the other Iraqi patients, because of the rapid development in health care services general and Erbil become the country medical capital. Many Iraqi patients seek treatment their instead for outside Iraq (Report, 2013).

In Kurdistan, the pharmaceutical improvement was very fast and in the right way. However, it was just import for pharmaceuticals and a high percentage was of bad quality. Now this problem is partially solved. Two Kurdish private pharmaceuticals companies, Awamedica and Pioneer, have been established, to provide high quality, low cost medicines for the region. In addition to that, there are many efforts of the pharmacists Union in Kurdistan (pharmacist syndicate), the chairman for pharmacists for monitoring and standardizing of pharmaceutical pricing in all the private pharmacies. This system will probably help to remove the differences in pricing between pharmacies. In addition this make Kurdistan to increase the self-sufficient in terms of pharmaceuticals supply(IIG, 2014).

1.9.3 Characteristics of Iraqi health care model

In Iraq, there is no private health insurance. However, the public service, public health insurance, social insurance, or other sickness fund does not provide sufficient medicines coverage to get complete treatment for patients. There are no co-payments for or fee for pharmaceuticals. The whole population is covered by a public health service, public health insurance or social health insurance (WHO, 2011).

1.9.4 Regulatory framework in Iraq

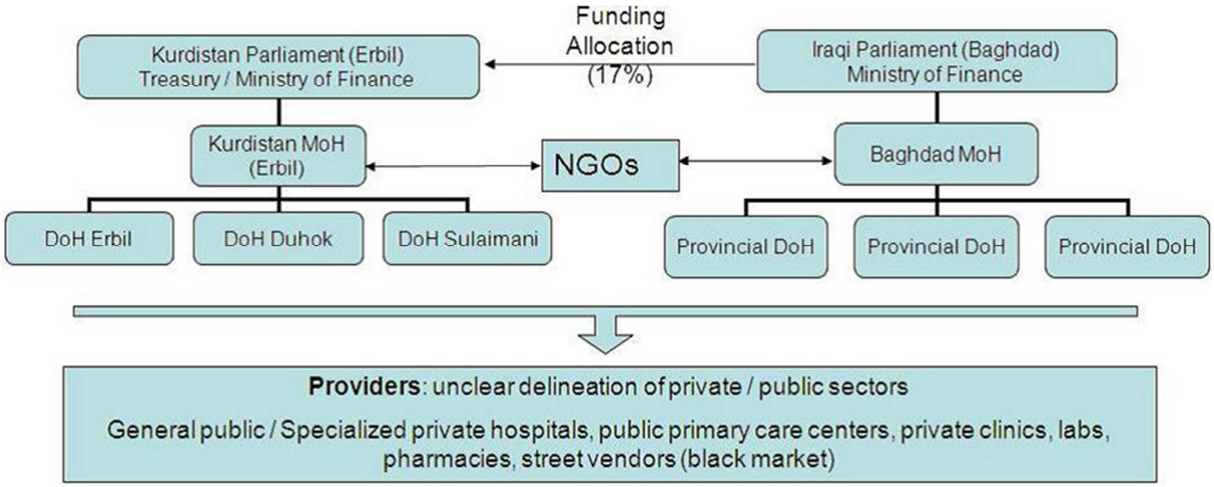
There are no legal provisions/laws, establishing the responsibility of the medicine regulatory authorities (MRA). There is no law, or act that provides power and responsibility to a MRA in Iraq. There are ministerial orders, relevant laws , but not one direct and distinct document that regulates the work of a MRA (WHO, 2011).

In Iraq the Ministry of Health (MoH) is a federal headed by a health care minister in Baghdad (the capital for Iraq), The Central Government, and the Ministry was established in 1956. A separate Ministry of Health was established for Kurdistan (the Kurdish region), Regional Government, with much the same structure. Kurdistan Medical Control Agency (KMCA) was established in 1992 (Al Hilfi, Lafta, & Burnham, 2013). Basically, there are two MoH in Iraq ,the Federal MoH in Baghdad and The Regional MoH in Erbil KMoH, Kurdistan and 19 provincial Departments of Health (DoH)(one in each provinces and two in Baghdad) (E. WHO, 2013).

In KMoH, there is a similar description of weak health systems governance and fragmented services. The organizational structure of KMoH is a minimized Iraqis wider national system and has the same key poorly designed characteristics features: (centralized, politicized, non–transparent, disorganized, with no clear governance, regulatory, financing or accountability framework, let alone vision or goals (Tawfik-Shukor & Khoshnaw, 2010b).

KMoH in Erbil is accountable to Kurdistan Parliament’s and founded by Kurdistan Treasury. Theoretically, KRG budget is obtained from Baghdad government (Ministry of Finance) through transfer payment equivalent to 17% of oil revenues (se figure 6) (Tawfik-Shukor & Khoshnaw, 2010b).

Figure 6. Health system structure and governance in Kurdistan.



Source :Reprinted with permission from the author by e-mail (Tawfik-Shukor & Khoshnaw, 2010a).

In the figure above, the relation between KMoH and IMoH is characterized by standoffs rather than cooperation. The relation with Baghdad attempting to curtail Kurdistan's autonomy by withholding or delaying funds, restricting pharmaceutical supplies in public sector,(many of which are either not required or near expiry, due to the Iraqis inefficient federal clearing house) and entry of Non-Governmental Organizations(NGOs).It seems to that KRG is left at the mercy of Baghdad's choices (Tawfik-Shukor & Khoshnaw, 2010b).

In the north ,the Kurdish Regional Government in Erbil developed its own budget and management process which was similar to the one in Baghdad (MoH).Staffing of health facilities in the Kurdish area was supported and added by immigration of doctors and nurses fleeing from elsewhere in Iraq(Burnham, Lafta, & Doocy, 2009).

The State Company for Marketing Drugs and Medical Appliance (KIMADIA), until 2004,was the state drug and medical appliance supplier and the main importer and distributor of drugs and medical equipment for all Iraq. KIMADIA now supplies only the public sector(E. WHO, 2013).

The directorate of technical affairs in the ministry of health (MoH) in addition to the state owned public pharmaceutical insurance and distribution company (KIMADIA) and the syndicate of pharmacy play the functions as a MRA. It is a part of the MoH within different functions outline, such as quality control of pharmaceuticals imported and produced, marketing, licensing, market control. Marketing authorization (registration for all pharmaceuticals on the market is required). In 2011 there were 7000 pharmaceutical products registered in Iraq(WHO, 2011).

Generally, there is no legal or statutory decision on pricing of pharmaceuticals in the private sector. The state does not run an active national pharmaceutical price regulating system for retail price. Price availability and affordability of key medicines are not managed in the last five years. Iraq does not oblige duties and taxes on imported active pharmaceuticals ingredients (APIS) and not on the ready import packages. Pharmaceuticals are not subjected to taxes(WHO, 2011).

1.9.5 Pharmaceutical financing

In theory, all Iraqi receive health care and medicines either free of charge or for a symbolic nominal fee of (500 Iraqi Dinar (ID) which is equivalent to US $ 0,43 and to NOK 3,32)[4]Concessions are made for certain groups of patients to receive medicines free of charge:

1. Patients who cannot afford them
2. Children under five
3. Pregnant women
4. Elderly person

In addition to that, the public health system or social health insurance schemes provide medicines free for charge for particular conditions such as:

1. All diseases in the essential medicines list
2. Any non-communicable diseases
3. Malaria
4. Tuberculosis

[4] The minimum currency value in the Iraqi market in 2015 is 250 ID≈ 1.6 NOK/January.2015

5. Sexually transmitted diseases
6. HIV/AIDS
7. Expanded program on immunization vaccines for children
8. Any other health problem(WHO, 2011).

2 Purpose

The objective of this study is to describe the Iraqi price and payment system for pharmaceuticals and to explore the potential feasibility of the Nordic pricing and reimbursement model for Iraq, as perceived by pharmacists working in the Iraqi health care sector, focusing on Norway as a case.

3 Methods and materials

In this section the methods and the planning will be described, e.g. the choice of the method and informants, the drafting, the interview guide and the data analysis will be explained.

A qualitative research approach inspired by both Malterud and Kvale/Birkeman was applied in the study, both explained that the aim of the study decides the method of the research(Malterud, 2011). Since the aim of the study concerns the meanings of unexplored attitudes, a qualitative method is the best choice (Larsen, 2007).

In this study, a multiple methodology approach was used to understand what ,why and how things work (Almarsdóttir & Traulsen, 2009).Three approaches were used; a review of the literature, qualitative interviews (since literature search revealed meagre data on pharmacists' experiences/opinions and the general lack of information of pharmaceutical pricing system as a whole in Iraq), and data collection of diabetes in Iraq/Norway as a case to exemplify differences in availability and affordability of medications.

3.1 Literature review

Literature was obtained both from published research reports, newspaper articles, books, as well as from the internet pages of various authorities and organizations. Several international researchers have provided the study with charts by private e-mail. The literature search was done in Google, Google scholar, PubMed and the electronic library for the University of Oslo. The searching key words were around: Nordics, Iraq, Kurdistan, Pharmaceuticals, reimbursement, pharmaceuticals pricing, EU health care system, and feasibility studies, pharmaceuticals companies in Kurdistan, pharmaceutical system, Nordic pharmaceutical model and Iraqi crisis. These words resulted in more than 1000 articles.

The literature search for the pharmaceutical system in Iraq gave limited results. For example, there were few articles about pharmaceutical pricing and policy in Iraq. No

feasibility of foreign pharmaceutical pricing and reimbursement systems studies for Iraq were found. The Nordic literature search was rich. Generally, the literature search strategy was developed by means of internet and personal views. The data about the pharmaceuticals reimbursement and pricing system for Nordic countries were collected from the published research reports, articles, journals as well as the internet pages from some authorities. All articles were collected between 01.04.2014 and 30.12.2014.

3.2 Qualitative interviews

Semi-structured interviews were used to get answers to the questions, with this method the interviewee can give broader information than with other methods like the questionnaires (S Kvale, 2009; Steinar Kvale & Brinkmann, 2014).

3.2.1 Thematization

This phase include the development of the topic guide questions according to the aim of the study(S Kvale, 2009; Malterud, 2011). An interview guide consisting of eight open ended questions was developed (see Appendix 3), by aiming at mapping and understanding the Iraqi pricing model in different geographic areas (North-Middle and South of Iraq) and to shed light on the aim of the project from the pharmacists point of view, to explore the potential feasibility of the Nordic pricing and reimbursement model for pharmaceuticals in Iraq.

3.2.2 Choice of data collection method

The design was a semi-structured in-depth interviewing via Skype and/or face-to-face to map the experiences and views of pharmacists. The use of this type interview can help to get broader and deeper answer from the interviewee, follow up better by the interviewer, and ensure the right understanding to the questions. All the interviews were concentrated in the same aim with the possibility of supplement questions if they were emerged for other interesting topics. The interview topic guide started with indirect questions and the purpose will be explained at the end of the interview by using the funnel technique, a good interview questions should be thematic and it should be dynamic to create a good interaction in the interview(S Kvale, 2009).

3.2.3 Informant choice and recruiting

The project plans to recruit for qualitative interviews and the inclusion criteria were the pharmacists from Iraq and Nordic countries, that have diverse mix of knowledge from different pharmaceutical sectors and from different geographic regions in Iraq (North, South and Middle); such as pharmacy leaders, wholesalers owners, a decision maker such as the manager of pharmacy department in MoH and academics and lecturers, a mix of both genders. The method of recruiting informants was through own network, partly through snowballing. In addition, a colleague's network, such as LinkedIn and FIP (International Pharmaceutical Federation), was used to recruit informants.

The researcher did not have an opportunity to travel to Iraq. Hence Skype-interviewing was used.

Initially 20 individuals from Norway, Denmark, Sweden and Iraq, with 10 to 35 years job experience were invited to participate, but only eleven wanted to participate. Invitation letters were sent to nine pharmacists with Iraqi background, but working in the Nordic countries (Sweden, Norway and Denmark) but just two of them wanted to participate, two answered with no, four didn't respond and one accepted but later pulled back. On the other side, eleven Iraqi pharmacists living in Iraq (or temporarily studying abroad) were invited to participate. Nine of them accepted, and two did not respond.

The only reason given by a participant for turning down the invitation to be interviewed was the political situation in Iraq especially in this period (Iraqi crisis period), the weak confidence and the skeptical/ difficult situation of most of them as they had political refugee backgrounds. Otherwise, the pharmacists were busy and had no time to participate and some may have been skeptical towards this contact from an unknown person. Recruited informants were informed about the purpose of the study via a formal invitation letter (see appendix 2), information attachment (see appendix X7) and consent for participation (see appendix 2).The aim was to recruit

informants until data was saturated. The last two interviews in December 2014 with two informants from Iraq gave the same results and no change in the results occurred. Therefore, the data seems to be saturated. The interviews were conducted in the period between 23.05.2014 and 26.12.2014.

3.2.4 The interviews

The one-to-one interviews took place through Skype / face-to-face interviews in Norway. The duration of the interviews was between 40-60 minutes. Skype interviews took place with video on while interviewing, but only audio recording. The main interviews took place in the period between the end of May 2014 and the beginning of December in 2014.

The first interview with the first informant was used to test the interview topic guide as a pilot interview. The pilot interview was done with a pharmacist from Iraq who was a pharmacy owner and also a PhD student in a university in USA. This interview was not used in the results but it is used to reflect on the interview topic guide. Unclear questions were identified and adapted better to the interview with the first informant.

The study informants received formal invitation letters informing about anonymity and confidentiality issues of the study and about the use of Skype being secure according to Skype legal privacy policy (see Appendix2). The Skype-account for interviewing was deleted after data-collection. The researcher also explained that the participation in the study depended on the consent of the informant, and consent for participation was obtained verbally by telephone or in writing by e-mail. The interview conversation was relatively spontaneous.

At the beginning of the interview, before turning on the recording, a few issues of information and clarification were mentioned:
1. It was explained that the interview could be muffled and there might be unexpected cut-offs and interruptions. If this would happens, the researcher would make a new attempt to get through.
2. The pharmaceutical pricing and reimbursement system in the Nordic countries was briefly explained.

3. It was explained that the informant could choose between; Arabic, English or Norwegian.
4-It was explained that the dialogue would be free flowing
It was explained that the informant would be anonymous in all published writing about the project.

The study was approved by the NSD (Data Protection Official for Research); (see the notification form in appendix 6).The informant's sensitive information was anonymous. According to NSD, the notification of the study is compulsory when the researcher uses computer based equipment like text, audio or video.

3.2.5 Transcription

Interviews were tape recorded and transcribed at the same day of the interview. The questions were written in English, but the interviews were performed in Arabic. Each interview was heard many times to ensure that everything had been understood correctly and they were no missing words (see appendix 4). Interviews were transcribed in Arabic and translated into English. The method for translating was by using the Word 2010 translator, combined with the researcher's understanding of Arabic, which is her native language. The translation was done paragraph by paragraph to get the most accurate meaning.

The Skype account was erased after use and the tapes will be erased on the completion of the study. All personal identifiers have been removed from quotations in this thesis and from the transcripts.

3.2.6 Analysis

The purpose of the analysis phase of the interviews is to produce information about attitudes and values. According to the inspiration of Kvale and Malterud , an approach similar to Malterud's meanings condensation method used in the analysis of the interviews(S Kvale, 2009; Malterud, 2011).The meaning condensation method can illuminate the meanings bearing units (words) from the informants response and answer and amend them for shorter sentences and codes (Malterud, 2011). Key

words in the coding process were pricing, margins, reimbursement, feasibility, benefits, availability and affordability.

The analysis of interviews process took five steps. The first step was through the reading of the transcribed interview in order to make an overall impression and without having the theme and the aim of the study in mind. The second step was to read each interview again but taking in consideration the informant´s attitudes and values. The third step was to reformulate the relevant units of opinions in short sentences and divided into items, and the information related to the aim of the project must be in focus. The last two steps were to make questions to choose the information related to the objective and write them in descriptive text of each theme, as presented in the section of the results (Malterud, 2011).

The analysis initially was done manually, thereafter transferred to hyper research program to get a better overview in the computer (Hesse-Biber, Dupuis, & Kinder, 1991; Kinder, 2008). The quotations in the results chapter were interpreted and written in the researcher´s words only the best quotations were used in the text (S Kvale, 2009).

3.2.7 Validity, reliability, and generalizability

This include the evaluation of the terms; validity, reliability and generalizability. The validity explain if the method chosen can illuminate the problem and all the seven phases in the interview method decided the validity of the method. Reliability involves whether one can trust the results of the study. This is often related to the survey results can be reproduced by other researchers using the same method. The generalizability related to whether the results of the study can be transferred to other informants and other situations (Malterud, 2011). However, the study cannot generalize globally, but it can be generalized compared to similar situations in the world, that is countries that have similar conditions to the Iraqi conditions.

3.3 Diabetes case

In addition to the literature review and the qualitative interviews, a case study was applied on the diabetes treatment in Norway and Iraq. The case focused on differences in availability and affordability of medications in Norway and Iraq to illustrate differences in pricing and reimbursement models for diabetes medications. Data was collected on pricing and margins information. This included some unpublished data from MOH institutions in Iraq. About diabetes treatment from different sectors and areas and from the institutions (see Appendix 5).

A data collection form (see appendix 5) was developed to address the available medicines in diabetes treatment in Iraq and Norway in order to collect information about pharmaceuticals and blood sugar measurement devices access in Iraq, and to get clear idea about the difference in treatment options in Iraq versus Norway.

The table was sent to some of the project informants after a deal with them and asked them to collect the sample in two different areas in Iraq, one in North Iraq (Kurdistan) and the other in South Iraq. In addition to the table, the informant collects some pictures to show some of diabetes treatment forms and measurement instrument, and this available in Iraq from one of the Diabetes clinics, its pharmacy store and a private wholesale store.

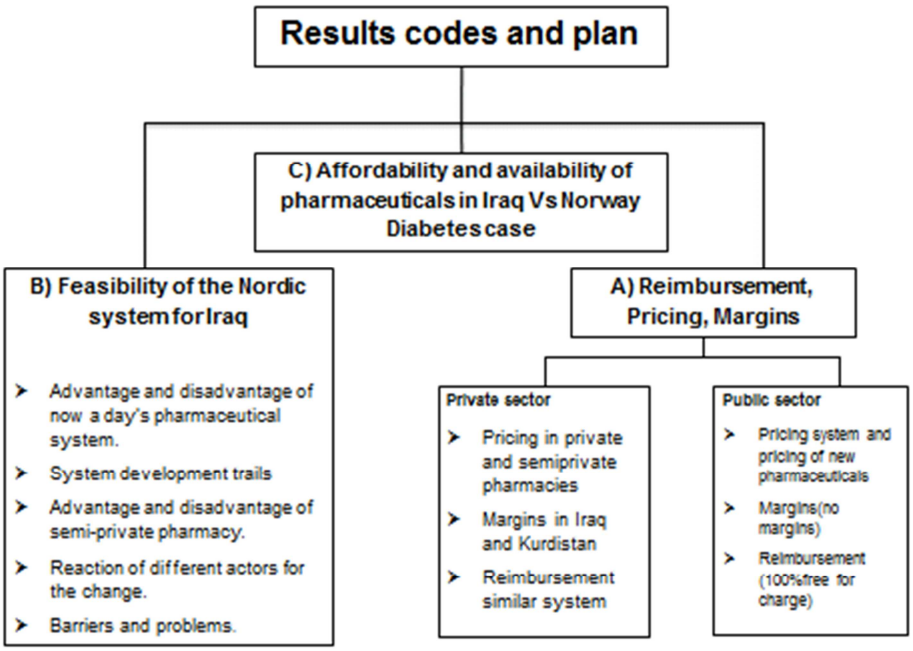
The Diabetes table has been analyzed with simple calculations by the researcher, to compare the prices after reimbursement in Iraq and discuss the expectancy of reimbursement price in case of reimbursements application in public and private sector. This will be illustrated later in the text. In addition pictures demonstrating availability are shown in the result section.

4 Results

4.1 Overview of the result section

The figure below summarizes the results of the study depending on the analysis of interviews and gives an overview of the following result section. The main sections are: A) Reimbursement, pricing and margins; B) Feasibility of the Nordic system for Iraq and C) Affordability and availability of medications. Under each main section several sub-sections follow for further exploring the study aim (see Figure 7).

Figure 7. Overview of the results chapter related to the pharmaceutical Nordic pricing and reimbursement system.



The results of the qualitative interview and informant recruiting are shown in details in the table below (see table 4). The duration of the interviews was between 40-60 minutes. The result of the coding process was 22 codes based on the informant's interviews and the aim of the study (table 5).

Table 4. The characteristics of the informants.

Feature	Number
Male / Female	8 / 3
Iraq / Norway	9 / 2
North Iraq (Kurdistan)/ South / Middle / Norway	2 / 3 / 4 / 2
Pharmacy owner / Employer	9 / 2
_Civil servant *	5
_Scientific bureau*	2
_Academic pharmacist*	4
_Whole sale owners*	2

*Duplication in job area

Table 5. Codes resulting from the data analysis of interviews, 3 main categories and 19 subcategories.

A) Reimbursement, Pricing, Margins

- Pricing decision of pharmaceuticals in public sector in Iraq.
- Pricing in public sector.
- Pricing of new pharmaceutical.
- Margins in public sector.
- Pricing in private sector.
- Factors affecting on pricing in private sector.
- Margins in private sector.
- Reimbursement similar arrangement in Iraq.
- Definition of semiprivate clinics.
- Pricing in semiprivate clinics.
- Mechanism of pricing in semi-private clinics.
- Margins in semi-private pharmacy.

B) Feasibility of Nordic pharmaceutical system in Iraq

- Advantage and Disadvantage of now a day's pharmaceutical system in Iraq.
- System Development trails in Iraq.
- Advantages and Disadvantage of semiprivate pharmacies.
- Barriers and problems to apply Nordic system in Iraq.
- Changing possibility in future/method to change.
- Reaction of different actors to reimbursement idea.

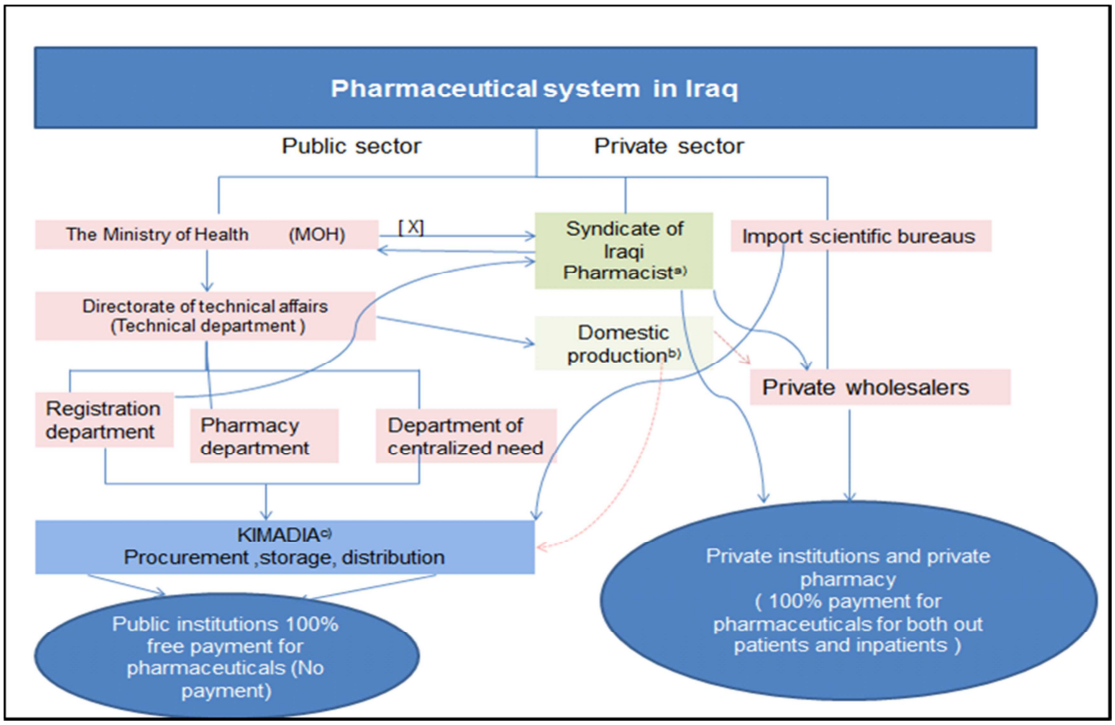
C) Affordability and availability of medication in Iraq

- Diabetes case

4.2 Pricing and margins system of pharmaceuticals in Iraq and a reimbursement similar system (public and private sector)

Firstly, the pricing in the public sector will be described followed by the private sector. Then and according to the informants, the pharmaceutical system in Iraq could be summarized by this flowchart below which show the procurement of pharmaceuticals and the decision makers in pharmaceutical system as a whole both public and private sector (see figure 8). The figure below developed by the basis of the information from informants and some online research on some national health authorities in Iraq.

Figure 8. Flow chart of the pharmaceutical system in Iraq.



a) Syndicate of Iraqi pharmacists (SIP). SIP was founded in 1967 after it was legislation Pharmacists Syndicate Law No. 112 of 1966 to be an independent institution for the union health professionals caring affairs profession of pharmacy and pharmacists in Iraq and is working to achieve the goals contained in the law and seek the union to contribute to improving the health status of the construction of the human through practice scientifically valid and legal profession of pharmacy check with the rest of the health professions building a sound health system is headed by the current union, Dr. Mahmoud Abdel Rasoul Louis
[X] The control committee consisting of representatives from MoH, Pharmacists syndicate and the local DoH is responsible for approval and laws, it's has the same role of medicine agency in some European countries, directorate of health responsible for authorization. This control process is just for private sector to control the professional laws.
b) Domestic manufacture Local Iraqi private pharmaceuticals production which with authorization from MOH according to GPM(Good Manufacture practice) Domestic manufacture have small and pharmaceuticals with no specialist products .Very small part of private sector .
c) KIMADIA has the procurement's responsibility in public sector

According to the informants and the scant literature available, the pricing of pharmaceuticals in Iraq in the private sector is different from the public sector. The procurement of pharmaceutical process in Iraq in public sector has been described by many informants and be illustrated with figure above (figure 8).

Informants mentioned that there is a committee of drug selection at the Ministry of health that has the responsibility of selecting which type of medications can enter to Iraq for both public and private sectors in the pharmacy department in the Ministry of health. The national drug list which can be sold both in the private sector and the public sector and the essential drug list which is restricted to the public sector only and there are the lifesaving drugs only.

Every governorate has a nominated center DoH, public sector institution, where requirements of pharmaceuticals for the following year for that governorate have been collected, coordinated and collated and a single report and submission prepared. Then the information is sent to Baghdad MOH to the Technical department who studies and evaluates the submission, looking for example for requests for obsolete pharmaceuticals and potential to substitute newer or more efficacious treatment.

Different committees have been involved in this process and a list for pharmaceuticals is prepared and sent to Department of centralized Needs where quantitative elements of requirements are prepared A statistical study is done on the background of known factors e.g. population, diseases prevalence. This includes a discount factor applied on the basis that is believed each health district over estimation of its requirements for the forthcoming year. In practice, this is just an estimation numbers and lists.

The specialist hospitals and clinics submit their own requirements, which are then evaluated separately. The evaluation of the lists might be according to domestic availability, quantity against availability, quality of imports (versus domestic production) and price. Tenders are then issued by KIMADIA.

4.2.1 Public sector: pricing system and pricing of new pharmaceuticals

All informants mentioned that in the public sector, the decision maker to pharmaceuticals procurement is from the MOH. That means that the government has the responsibility to buy the pharmaceuticals and to distribute it free to the patients or public sectors users. KIMADIA is supported by state budget. The state pays to the pharmaceuticals companies by KIMADIA and the patients get free medications -100% "free"- in public sectors for both inpatients and outpatients in most parts of Iraq. Some of the informants mentioned that the patients pay just a minor fee to the public institutions to get a ticket between (1-5 $ =7-35 NOK in December 2014).[5] Some informants expressed that by *"In the public sector the medications are free and the patient will pay from 1 to 5 dollars to get a ticket but the medications are free for both inpatient and outpatients*" (Informant No.6)

According to the informants, the ticket simple value taken by the Finance minister and the purpose of the ticket is to support the registration process at the institutions. It could help in some simple reparations in the building of institutions as example; but it is not so big income. The public sector is just consumer in its budget and there are no co-payments by patients. It is the state government budget only that supports the procurement process from the oil fund budget. There are no taxes funds recommended to support the health care system as a whole. The pharmaceuticals procurement cost the state millions dollars (about 5%[6] of the government budget) to support the health care system, as well the pharmaceuticals procurement and other health services.

Many informants thought that the public sector now was not a correct system because the state will consume all the resources to buy some essential pharmaceuticals. This may lead to limitation in the availability of the expensive pharmaceuticals because of the deficiency in the money (The budget). A couple of informants expressed this, one said " *I think the pricing system now is not correct, especially in the public sector because the state will consume all the resources to buy the medications over the real need to the user"* (Informant No.11)

[5] USA 1 $ = 1178 ID(Iraqi Dinar) = 1000 ID = 5 NOK (the next minimum market value in Iraq today
[6] According to (the literature research from) the WHO website

4.2.2 Public sector: pricing regulation Mechanisms

According to the informants, the pricing regulation mechanism in public sector is approximately the same in Kurdistan area and the rest of the Iraqi regions (South, Middle and west). Iraq MOH and Kurdistan KMCA apply the same principle in procurement policy. The pricing decision in public Sector depending on professionals decision makers. The informants further described that there are committees in the MOH and KMCA, including the department of pharmacy. The Pharmaceutical purchases committee consists of pharmacists, economists and physicians. The committee does not use an economic health economics analysis. There is no effective use to the cost utility analysis. They only include economic view of the decided yearly budget. One informant from MOH Baghdad emphasized that: *"Generally there is no organized economic evaluation*". (Informant No. 4).

Generally, the mechanism in pricing depends on the procurement/Purchases committee) which is a part of the MOH. The committee is responsible for the selection of pharmaceuticals that enter Iraq in both private and public sectors. The MOH establish this type of committee to include many opinions in the annual pharmaceuticals' need decision .The economic role in this committee is to connect the MOH with Finance minister to get information about the financing ability of the state and on, how much the state has budgeted for the health care sector

An informant (a decision maker [7]of pricing with pharmaceuticals), mentioned the mechanism of the pharmaceuticals in public sector and the process of purchases and the responsibility of MOH to buy the medications for the patient in Iraq and how the state pay to the pharmaceutical companies to provide free medications to Iraqi patients in public sectors, saying: *"KIMADIA is responsible to buy the medications. It is supported by state budget given to MoH. The MoH budget depending on the budget from the Oil fund 95%, less than 2% from taxes. All the medications must be registered and have quality control permission before the pricing of pharmaceuticals."* (Informant No. 1)

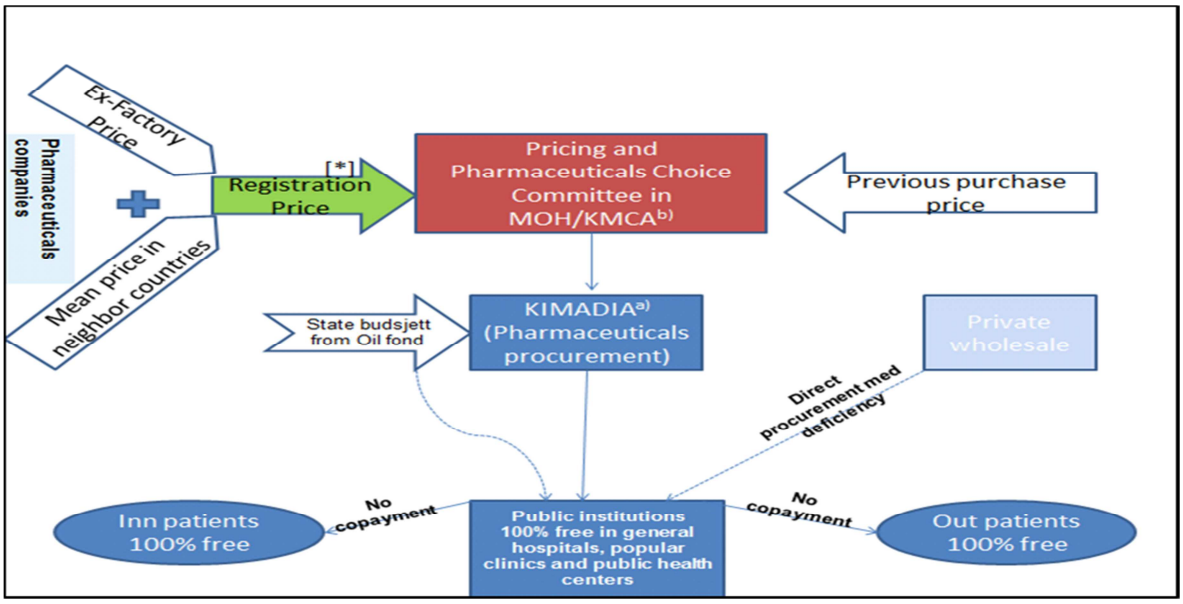
The informants' descriptions of the pricing mechanism in Iraq and Kurdistan were similar. This was expressed in the words of one of the informants :-"*The pricing*

[7] Chairman, a part of Ministry of Health

mechanism depending on the registration price and the previous import price of medications (The previous import contract price) This is an evaluated or estimated price not standard for example insulin import price in 2013 from Novartis was 10 dollar per Vial in import contract for 2013 with the import company, to write a new contract for 2014 for the same product re-evaluation happened, after negotiation and agreement on purchases price from the manufacturer." (Informant No.1)

The figure below (see figure 9) shows the mechanism of the pricing and procurement process and the different actors who are responsible on the pharmaceutical purchases in public sector both in Iraq and Kurdistan regions, similar pathways noted, according to all informants.

Figure 9. Pricing process in Public sector in Iraq and Kurdistan.



a) KIMADIA=The State Company For Marketing Drugs and Medical Appliances which is the only IRAQI company which is specialized with regard to importing ,storage and distributing of pharmaceuticals and Medical appliances and Equipment's regarding the public sector institutions in Iraq and Kurdistan ,involving (General hospitals, popular clinics and public health centers) KIMADIA was established in 1964.
b) KMCA= Kurdistan Medical Control Agency
[*] See figure 10

The pricing of pharmaceuticals procurement's decision depend completely on the negotiation between the state and pharmaceuticals companies. There are many factors, which affect the price of new pharmaceuticals in the Iraqi market and its procurement price. The registration department in MOH calculates the pricing of the new medications in Iraq and gives it registration documents, and then it will be sent to

the committee for the purchases of medications. When the committee agree with the pharmaceutical company and decide the purchases price, then a procurement order send to KIMADIA, which has funds from the oil budget to buy the pharmaceuticals and distribute it to the public institutions only.

In addition to that and according to many informants, usually the hospitals can get a special budget from the state's oil fond to buy the remaining of the pharmaceuticals they need from the private wholesalers, especially in the last years because of the lack in availability and the wrong pharmaceuticals needs estimation. The final consumers of pharmaceutical get it "100% free" of charge in public institutions (public hospitals, health care clinics and public clinics).The last two informants of the study in December confirmed the availability problems in public hospitals and the mechanism of hospital purchases. One of them expressed that by saying: "*Not all the pharmaceuticals available in public sector hospitals, about 70% available now and the rest can buy by the hospital budget"* (Informants No.10). For more details see figure 9 above and figure 10 below.

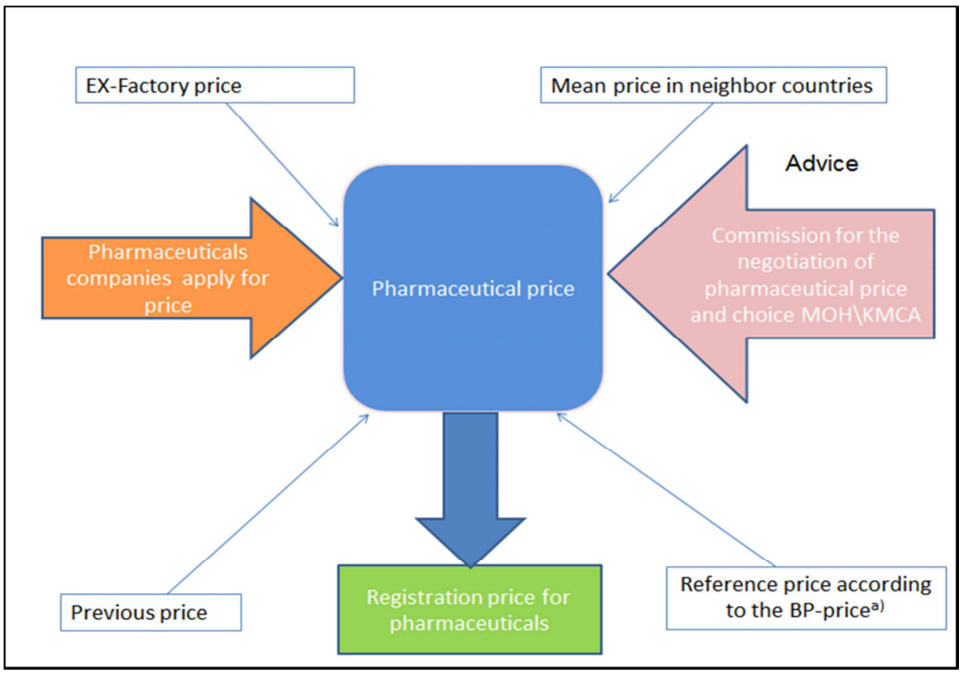
Registration price is important also for the process of pricing for pharmaceuticals in Iraq. According to informants from the Ministry of health/department of pharmacy; the registration price for the neighboring countries Jordan, Kuwait, Turkey, Saudi Arabia depending on the similarity on the environmental conditions and the stability study for different pharmaceuticals. *"It is priced speculative by using the Ex-factory + 55% which represent the tax, shipping and transportation and other expenses. We take the lowest price in neighboring countries"* (Informant No.1). The procurement price in principle is estimated according to this simple calculation sentence:

"X- Factory price + 55% of the price (for taxes, transport and other shipment cost).

This was process of pricing in the public sector. The same informant underlined that *"The state pay to the pharmaceutical company and the patient get free medications"* (Informant No.4)

The registration price and the origin of it is demonstrated in procurement process in public sector in figure 9 and the factors which affect this price will be demonstrated in figure 10 below.

Figure 10.Factors influencing the registration price and procurement of pharmaceuticals in public sector in Iraq.



a) BP: The British Pharmacopoeia the official source of British pharmaceutical standards. The reference price according to the British Pharmacopeia in case of application of new pharmaceuticals, in Iraq they used to use the British pharmacopeia as a reference in both formulary and Prices the previous price is the previous import contract price. This is an evaluated or estimated price not standard for example; insulin import price in 2013 from Novartis is 10 dollar per Vial in import contract for 2013 with the import company then to write a new contract for 2014 for the same product re-evaluation to the price happened. Some informants emphasized that.

The public sector pricing mechanism in Kurdistan, the northern part of Iraq is depending on the central MOH and KIMADIA policy in pharmaceutical purchases and budget from the central government in Baghdad (MOH). Due to slight differences between Kurdistan and the rest of Iraq, pricing and reimbursement for Kurdistan will be addressed specifically in the following, for example in sections 4.2.5 and 4.3.3.

4.2.3 Public sector: margins

Generally all the informants agreed that there are no co-payment from patients and the pharmaceuticals are 100% reimbursed by the state no margins in public sector institutions. The patients get medications free which is originally funded by the oil and the state. The pharmaceutical companies only get the money and margins from the state according to price negotiation. The informants generally thought that the

pharmaceutical companies were the winners having the highest margin in both sectors (public and private sectors).

4.2.4 Private sector in Iraq and Kurdistan: Pricing and margins regulation

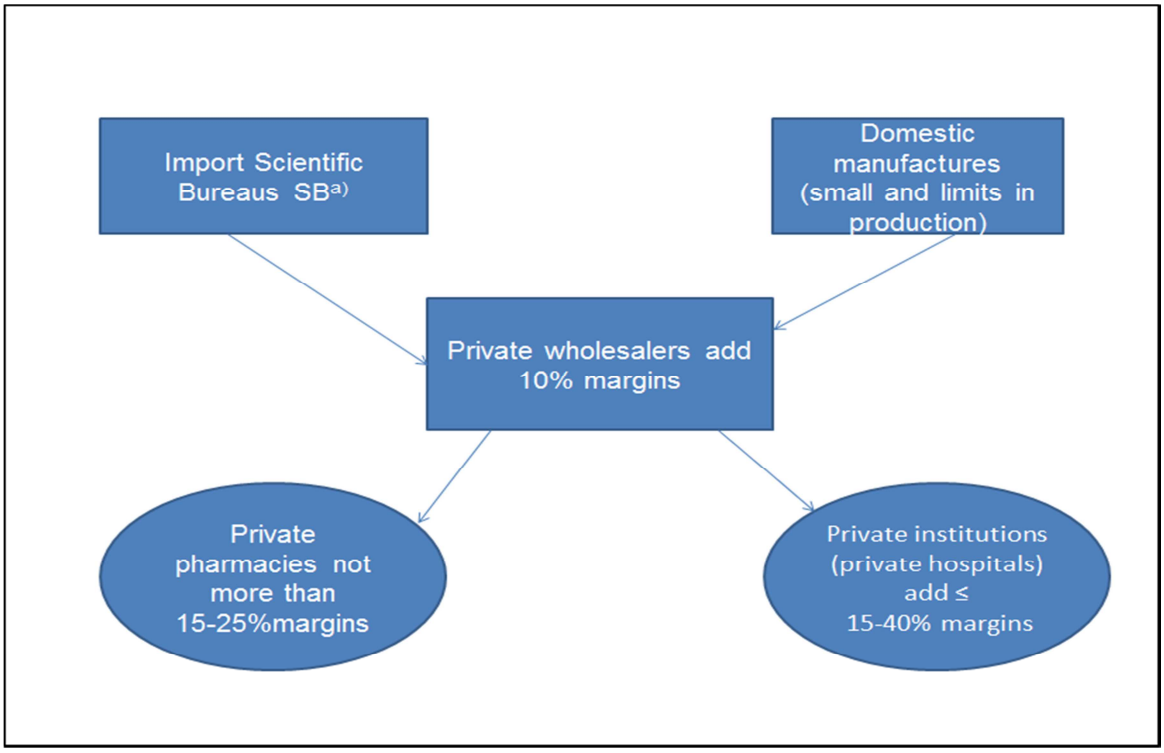
From the informant 'point of view, there were variations and multiple sources for entering of pharmaceuticals in private sector: external suppliers that supply new products in the control of MOH /KIMADIA); importers and distributors (private scientific bureau); low cost manufacturers and high value manufacturers (capital cost currently small domestics market)

According to the informants, there is no organized pricing system in the private sector for pharmaceuticals and no fixed prices. For example, generally speaking, the pricing for pharmaceuticals differs from pharmacy to pharmacy depending on many factors such as the location of the pharmacy, rent, employers, transport and other factors. The informants gave different impressions about the pricing system and described different aspects in the private sector, from their private practice as a pharmacy owner, wholesale owner, and scientific bureau owner from different regions in Iraq.

There is a significant difference in pricing system and the margin level between Iraq and Kurdistan as regards the private sector and community pharmacies. The figure below (see figure 11) shows the pharmaceutical procurement in the private sector in addition to the pharmaceutical margins in the private retail pharmacy in Iraq. The pharmacy final price is the patient's price. The margin presented is per package. Informants pointed out, that there is no reimbursement/third part payment for patients in the private pharmacies, because it was just a private business to every pharmacist and pharmacy owner; and the patient have no economic support from the state when the patient buys a medication from the pharmacy. An informant said that*; "There is no chain pharmacy, each pharmacist has his own independent pharmacy, the patient must pay cash total fee for prescription, the patient must pay on time or not get the medication".* (Informant No. 3)

One informant explained of his experiment that the price of medications in the private sector in Iraq is divided in two pricing level according to the source of production, 1st level, the expensive one come from Europa and America, the 2nd level of medications pricing from the private sector, the cheap level of pricing are medications which are produced locally or coming from Asian origin. *«The patient must pay by himself for medications, anyhow, if he can"!* (Informant No.6)

Figure 11. Flowchart for pricing and margins of pharmaceuticals in private sector in Iraq in 2014.



a) Definition of scientific bureau (SB): an importers office is acting as agents or representatives of oversea manufacturers or manufacturer agents. They make their purchases either directly to the wholesalers and to the retail pharmacist or to the private health care institutions.

On the variation in pricing between the different pharmacies, one informant from Iraq described causes of this variation by mentioning many factors which could affect the price of every pharmacy in Iraq *"There is no pricing model in Iraq for the private sector, every pharmacist sell medications with the price which he/she thinks is good depending on the pharmacy locations, wholesale price and other factors such as local rent, staff, paychecks, electricity, transport and other bills"*(Informant No.4).

Sometimes, the pricing depends on the commercial competitions between pharmacies, the informant mentioned that by: *"The pricing each pharmacy is usually depending on the demined and the supply and competition between pharmacies at the same area"* (Informant No.8).

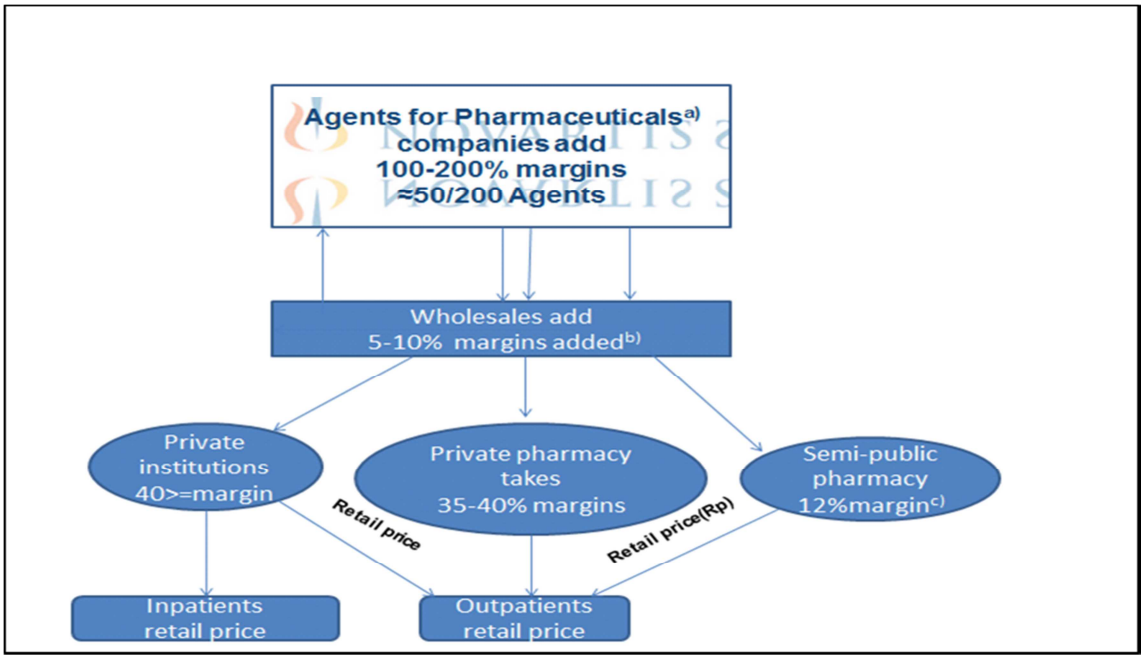
Generally speaking, all the informants agreed that the retail price in community pharmacy depends on the original price from the Import Company, Scientific bureau and wholesalers. As regards that, an informant who has a scientific bureau in Baghdad expressed: *"The import company + scientific bureau are the decision makers to pricing in private sector in addition to the wholesale and pharmacy who decided the final price to the patient"* (Informant No.5).

The pricing in the private sector and pharmacy margins are different in Kurdistan, there are no scientific bureaus there, but they have agents for the brand pharmaceutical companies. There are about 50 brand agents and there are more than 200 direct generic companies, according to informants from Kurdistan. There is a direct pharmaceutical market and more open market in the private sector with high margins percentages.

Generally, there is a pricing policy[8] in Kurdistan exists more pharmaceutical control by the KMCA (Kurdistan Medication Control Agency) and the Pharmacy Syndicate. The pricing system and margins determination in Kurdistan is mostly responsibility of pharmacy syndicate in cooperation with KMCA. According to an informant from Kurdistan, the pharmaceutical companies add 100%-200% margins for their products, sometimes the prices of the companies are higher in Kurdistan than in Turkish market from the same patent company*." we have the original pharmaceutical companies managers in Kurdistan. The method of manufacturer pricing for them is unknown, but the margins for them is between 100-200% especially in Kurdistan in compared with their market in Turkey* "(Informant No.6). The pharmaceutical pricing process in Kurdistan is demonstrated by figure 12 below:

[8]The pricing policy by which a company determines the wholesale and retail prices for its products or services (this is a general definition to pricing policy, the study about the pharmaceuticals and its pricing strategy in Iraq.

Figure 12. Flowchart for pricing and margins of Pharmaceuticals in private sector in Kurdistan in 2014.



a) Margins decision depends on competitions with each other and negotiations with wholesales.
b) Margins decision depending on competition.
c) Limited margins decided by KMOH (Kurdistan Ministry of Health)

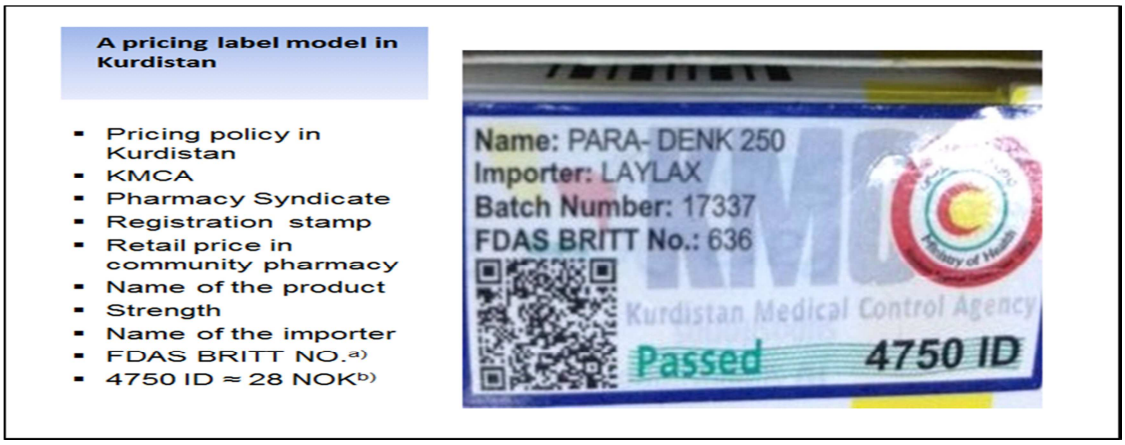
A couple of informants from Kurdistan expressed that there was a start of new pharmaceutical pricing policy and pharmaceutical control strategy. The labeling of package with retail price noticed in Kurdistan only. One informant described this by saying: *"Now, there is a committee for pricing and there is a pricing label model which shows the retail price in Iraqi Dinar in the label documented from Kurdistan medical control agency"* (Informant No.9).There is a label to indicate the quality control sign in Kurdistan from KMCA.

The figure 13 below shows the stamp of Medical Control Agency and the central pricing from the Ministry of Health in Kurdistan. However, this price in the label is not a 100% mandatory in different community pharmacies. Sometimes it will be a plus or a minus depending on other conditions to the pharmacies, e.g. location, employee and other bills. An informant from Kurdistan mentioned that there are efforts in Kurdistan to get maximum price system in but it is just a trail in KMCA *"It is just six*

*months old and now it is illegal to sell medications without this label, but not in other parts in Iraq" (*Informant No.3)

Figure 13. Pricing policy in Kurdistan (Pricing label model example).

Paracetamol tablet



a)FDAS Britt No: FDAS,a British company that according to their website ,signed an «agreement with Kurdistan Regional Government in September 2012 to provide (analytical testing services to the Kurdistan Medicines Control Agency (KMCA) to support actions to improve the quality of pharmaceuticals in Kurdistan region of Iraq. Photo: Food and Drug Analytical Services Limited (web sides)
b) Valuate exchange in 01.12.2014

Another informant from Kurdistan mentioned that there was a change in pricing policy in the period 2012-2013, but it stopped. *«The new pricing policy stopped in 2014 because of many problems for this system. The most important one is the increasing in medications prices to 20-30%. So it stopped in 2014"* (Informant No.6).

Many informants emphasized that there was a start for a new pricing system in Kurdistan, but now in 2014 it stopped because of many problems such as the sudden increase in pricing. They said that there was a pricing scheme in Kurdistan, but it did not succeed and stopped in 2014 and the dramatically increase in retail price for the pharmaceuticals was the reason to stop it.

Informants from Kurdistan explained that this scheme was decided by the pricing committee KMCA in Kurdistan by making a contract with the mother company and made negotiations depending on the mean of prices for the same medication in the neighbor countries (Jordan, Kuwait, Turkey, Iran and Saudi-Arabia). One informant

explained that *"They divide the medication price to 6 levels to decide the price and get the margins".* (Informant No.6)

The informant described these levels as;
The first level: in which pharmaceuticals with less than 1 dollar the permitted margins is not more than 30-35% in pharmacy and 50% margin to the company;
The second level: if the pharmaceutical price is between 1 and10 $ the permitted margins is 30% to the pharmacy and 50% margin to the company;
The third level: when the pharmaceutical price between 50 - 100 $ the permitted margins is just 5% to the pharmacy and 10% to the company and so on.

It was a good start but the "dirty job[9]" and the commercial swindle of some pharmaceutical companies and wholesalers; the retail price of pharmaceuticals, increased dramatically in Kurdistan to 20-30%, therefore the system stopped.

The informants generally thought that there is a type of flexibility of margins in Iraq, and the margins of pharmacist in community pharmacy now coming from:

«Wholesale price + location + competition between pharmacies + employee's paychecks».

All these factors must be taken in consideration to calculate the final price to the patient and the pharmacist's margins.

In addition to all this, some pharmacies can get higher margins than others, because of the pharmaceutical agents from the pharmaceutical companies. They can give a direct offer to the pharmacist so there is no intermediary (middleman), no wholesaler so the medication will be cheaper, - then the price can be lower in some pharmacies or the margins can be larger in some pharmacy, so it depends on the pharmacy owner's decisions itself.

On the other side, informants from Baghdad and other parts of Iraq (middle, west and south Iraq, not in Kurdistan), have got a new system to regulate the margins in

[9] Se definition of dirty job in Glossary section!

private pharmacy. This was applied after an agreement between the registration department in MOH and the pharmacy syndicate in Iraq to estimate a method for margins. An informant exemplified this type of system (trail)by: *"If the company price of X-Drug is 10 dollar so the margins of the wholesale must be not more than 10% and the pharmacy margins cannot be more than 15-25% depending on the original price of medication if it is expensive medicine, the margin will be minimum in Pharmacies" (*Informant No.1). Another informant mentioned that the margins in Iraq could be not more than 40%. *«The pharmacist himself decides his margins to get about 40% margins»* (Informant No.4).

The informants generally thought that the margins of the pharmacist in private pharmacy in Kurdistan were higher than in Iraq; and this was described clearly by one of the Kurdistan informants who said: *"the minimum margins of pharmaceutical in retail price in Kurdistan is 30-35% ,and sometimes have 100-200% margins. The prices of medications are lower in Baghdad"* (Informant No.3)

4.2.5 Public and private sector: a divided "reimbursement" system

Some informants described this system in one sentence: *"It is a type of a 100% Payment free system*" while others informants described it as «a semi-socialist system». Two informants from KMCA emphasized that there has been a development in the pharmaceutical system in the public sector in Kurdistan regarding a new experiment in reimbursement to get medications and good health service. In this new system which is restricted nowadays in some of the Kurdistan areas such as Erbil, Sulaimania, Dohok, and Holier. [10] There is a beginning plan of mixing the private sector with public to get better service to Kurdish patients. One informant described *"The government pays to the private pharmacy, to the pharmacist, 50% of the total price of the prescriptions per month"* (Informant No.6).

The margins for a pharmacy in this type of clinics are restricted to just 12% of the pharmaceutical price. These pharmacies are just in a special type of a public clinic, which is known as a consulting clinic. The pharmacy there is called a semiprivate pharmacy because it is managed completely by the government and partially

[10] Big cities in Kurdistan region

financed by the government. These clinics give good health care services. It is an optional job for the pharmacist to work in. It has good benefit and help to the poor people to increase the affordability of medications. An informant expressed this: *«For example: if the purchases for pharmacies is 100 million Iraqi dinar per month, the margins for this pharmacy cannot be more than 12% for the pharmacist and 50 million dinar pays to the pharmacy from this clinic as a co-payment from the state (Clinic)*"(Informant no.9)

According to the informants, the characteristics of these clinics are a special opening time between 2 o'clock to 6 o'clock and there were about 10 clinics in Kurdistan with contract between the clinic and the government, moreover it is a contract that contains more than 20 terms to secure the re-payment to the pharmacist and other clinic services. This clinic contains specialists, laboratories and other types of health services, all services charges in these clinics would be reimbursed by the government. This is the first sign of a start of co-payment and reimbursement but just in Kurdistan.

4.3 Feasibility of the Nordic system for Iraq

The informants generally thought that, the feasibility for applying any new system in Iraq depends on the development of the country and its political situation as a whole. Some of them thought that the system could be improved to something like in the stable countries, which have advanced technological control to avoid abuse.

Some informants thought the possibility to change must start with fixed price and margins. In addition, they mentioned that the decision maker, pharmacy syndicate and the MOH might have the responsibility to apply. One informant mentioned that the establishing of the new system in Iraq needs to study patient behavior on the reimbursement, and the understanding of administrative structure to such types of systems in other models is not enough.

Most informants thought that it would be a good idea if the governments made a good contract with the private pharmacies, and the government must have pharmaceutical policy makers with a good, professional view. Most informants thought that the change can happen, but it will take time and adaptation of the Nordic

pharmaceutical system to Iraqi conditions *"to make it, maybe we need 10 years job, with gradual change in the existing pharmaceutical system" (*Informant no.5). Many informants mentioned many barriers that are not easy to cross, especially due to the political situation. Two informants mentioned that it is possible and necessary to try it with a few pharmacies as a pilot pharmacy in Najaf, Karbala and Kurdistan.

Some of the informants expressed that the acceptance of this idea could happen gradually. Informants mentioned that "trust"/confidence between different actors was needed; computerized systems and solid systems to ensure the re-payment process between the pharmacist, patient and government. Many informants thought that, firstly, there is a need to improve the cooperation between the public sector and the private sector. One of the informants views about that in the future *«I think if we can mix between the private and the public sector and make cooperation between them then it will be a good result to get good availability and more affordability".*(Informant no.1).

The change has already started in pharmaceutical policies in Kurdistan; the informants mentioned that it would be a good system for the patients, especially for the expensive medications if the state reimbursed it.

One informant from Norway thought that the change can happen in some states in Iraq but not all. The informant said" *I think the changes can happen especially the reimbursement system in some of the states in Iraq in some private pharmacies such as at Najaf, Karbala, Kurdistan because they are rich and can support the pharmaceutical's budget, politically stable and safe, to be applied in one year with evaluation"* (Informant no.8)

4.3.1 Advantage and disadvantage of today's pharmaceutical system in Iraq

The informants gave an impression that the pricing system now is wrong and it could be difficult for many patients in the private sector and incorrect in the public sector because the state will consume all resources[11]some day and this can affect the availability of pharmaceuticals in the public sector. From the point of view of most

[11] The total health care budget was restricted with 4,9 % of the total state budget in 2014 according to WHO

informants, that it seems to be beneficial to change the old system to the better in the future. They said that the only winner of this old system is the pharmaceuticals companies and some physicians. The patients partially benefits in public sector, but the problem is the availability and the table below (see table 6) will summarize the advantages and the disadvantages of the current pharmaceutical payment model and pricing system in Iraq.

Table 6. Advantages and disadvantages of the existing pharmaceutical system in Iraq according to the informants.

Advantages:	**Disadvantages:**
100% free for patients in public sector.	No restriction in pricing and margins of pharmaceuticals in the private system.
The pharmacists in the private sector always have a good margins level. (Minimum 35%)	The government will consume all resources to buy the medications without partially contribution by the patients, could cause system abuse then leads to bad availabilities.
The pharmaceutical companies, wholesalers, scientific bureaus have a good benefits and good margins (earn money).	The patient cannot buy expensive medications in the private sector.
	A profession lacks a scientific view because of the intruders [a)] in the pharmaceutical markets.
	According to many informants, the corruption and the “dirty job” in public sector and the false pharmaceuticals in the private market are huge disadvantage.

a) According to an informant, the definition of an intruder is the owner of the capital who buys the pharmacist profession and the pharmaceuticals and non-pharmaceuticals and has complete capital to finance the community pharmacy. The pharmacist’s role in the community pharmacy, as an employer with a limited salary per month.

4.3.2 Attempts to develop the system

Three of the informants mentioned some attempts to change the pharmaceutical policy in the last years. These are now described.

4.3.3 Advantage and disadvantage of semi-private pharmacy

According to the informants; the first trial to implement a reimburse-like-system in the private sector for the pharmaceutical prices for the Iraqi patients in Kurdistan, were in the consultant clinics in parts of Kurdistan. The table below (see table 7) summarized the advantages and disadvantages of these type clinics in Kurdistan according to the informants.

Table 7. Advantages and disadvantages of semi-private pharmacies according to informants.

Advantages:	**Disadvantages:**
Most advantages to the patients who pay 50% of the total price of prescription and the state pay 50% to the pharmacist.	Limitations in margins for the pharmacist. Only 12%
Good start for the contract system between the private pharmacist and the public sector (The government).	The abuse of the system by the patient and the doctors because of the need and poorness. They could abuse todays “free” system as well.
Patients can get pharmaceuticals at lower prices than in private pharmacies.	Bad administrative control system to prevent the system misuse by the doctors and the patients.
Low cost for all services to the patients because the government reimburses all the service.	Economic problems to some pharmacists because of the confusion between the government and the pharmacists (Not completed re-payment to the pharmacist)
Good quality of the health service with modern buildings, furniture, locations and good equipment.	The patients misuse the actors in these clinics to get medications and sell it in the black market because of poorness.
	The pharmacists do not have a complete guarantee to get his money back especially now with the Iraqi crisis.

4.3.4 Reaction of different actors for the change

The reaction of the different actors to the reimbursement idea from the informant’s point of view gave impression that the reimbursement of medication could be a good idea for the patients, but it is not easy for the government to create a completely new system and it is hard to apply from the government’s point of view. This idea needs trust between different actors and needs time to apply the new system instead of an old system.

One of the informants mentioned that the pharmacist would probably be dissatisfied, because of the limitations in the margin´s value decrease of their business. The doctors will not like the idea, because they could miss the benefit of the invisible income (dirty job income) related to the indirect deal with pharmaceutical companies and sometimes with pharmacies. An informants said about dirty job that" *Illegal contract between the doctors and the pharmacy, not all but a lot.. There is a dirty job between the doctors and pharmaceuticals companies are running this type job. They buy doctors for the dispense their products where the company contacts the doctor and agree to exchange a certain amount, for example 500 specific product for travel outside Iraq for tourism or other type gifts, the doctor contact the wholesale directly and asking to send the quantity required to send it to the pharmacy who deals with in nearby area* " (Informant no.3)

Another informant described the dirty job by mentioning an example about this type of deals between the doctors and pharmaceutical companies, informant said that: . "*There is not complete study about the products out of need in Kurdistan which shows that 30% of the physician in Kurdistan write a food supplements in their prescription to increases the price of the prescription about $ 20 and this money given to the doctors who rushed to take the company to increase the margins of the company, leading to inflated price in Kurdistan*"(Informant No.6)

One more of the informants mentioned that the "good doctors" would support the idea, especially, the specialists because the system would help them to get the expensive medications for their patients and get better treatment results.

From the informants point of view, the wholesalers (pharmacists, businessmen and entrants to the market the wholesales have no idea about any system; they said it is just a business task for them to get money, it doesn't matter how and who has benefits. The most important thing for them is the guarantee to get their money back- it is just a marketing and competition matter.

A gradual change is important and helpful. Many informants thought that it is not easy to start a new system in Iraq and the decision makers will hardly react to change the system, the Ministry of health would not accept any change easily. One informant mentioned that «the *decision maker will hardly react, because it is difficult to get change in an old system for many years, I mean the ministry of health will not accept*

any change easily" (Informant no.4). Some informants mentioned that the government could get a benefit after a while of the reimbursement application because of the patients' contribution in payment in public sector which could help to increase the ability of the state to give better service in the health care system as a whole and to get a more organized administrative system to avoid corruption.

4.3.5 Barriers for the change (Dirty Job and problems)

Some informants talked about the "dirty job" that could destroy every change in the system. They mentioned the illegal contracts between the doctors and the pharmaceutical companies or agents and some pharmacists. For example the doctors get offers and gifts from these companies such as a travel ticket or money percentage in the margins or some expensive gifts.

Other problems are the companies without any official approval (the companies without registration in MOH and without any quality control to their products. In addition, to the illegal pharmacies and entrants the MOH has no control there because of this type of job. The other barrier which could be very important to impact the change is the deficiency in the informatics Systems (IT system). The technologic factor is important. The building of a new computerized system to get good and perfect connection between actors is important.(pharmacy, registration centers, MOH, Banks, wholesalers). More than one informant emphasized that, for example the one who said:" *if we can get a good electronic system and a good internet technology in Iraq such as Norway, I think it is the most important factor in pharmaceutical policy"* (Informant no.7). Another informant expressed similar concerns: *"get the important factors such as: internet and the electronic communication and the experience to use this type of system, I mean the electronic prescription, it is very good to start with especially in Iraq now, they have started electronic card of personal information*"(Informant no.8).

4.4 Affordability and availability of pharmaceuticals in Iraq vs Norway-Diabetes case

The availability of medications needed is the patient's problem in Iraq, and. the patient self-have the responsibility to find the prescribed medications for himself to get treatment, either in public or in private pharmacies. According to the informants, the public sector tries to get the medications, but it is not always possible. Therefore, the patient must find the medications needed from the private sector (Community private pharmacy) and it is not always affordable or available for him. *"about 60% of medications are available in the public sector e"* (Informant no.8).This was true before the crisis in June 2014.The last interviews in December 2014 with two informants who expressed opinions about the availability, one of them by saying: "*Nowadays, not all the pharmaceuticals are available in public hospitals. It has about 70% available because of the support of some international humanist organizations, such as UN and WHO. The rest of hospitals needs will be bought by every hospital from the private sector"*(Informant 10)

The informants generally thought that the Iraqi government has the responsibility for the affordability and availability of medications because of complex and difficult administrative problems. The patients prefer to go to the private sector, especially the cancer patients.

Generally, there is greater availability in the private sector for medications, but less affordable for patients. More than one informant mentioned that the cooperation between the MoH (public sector) and the private sector is necessary to get more available and more affordable medications for Iraqi patients. The state gives an economic support to the patient in case of buying the pharmaceuticals from the community pharmacy. One informant explained, *"The private sector is very important to make more available and affordable medications"*(Informant no.5).

According to informants, the lack of medications in the area is mostly cancer medications and the expensive drugs which are not available in public sector.

In Kurdistan the situation is completely different, due to the political situation in the area, the medications before the crisis are better than now, the availability was good

but the problem is the affordability of medications because of the dramatically increase retail prices of pharmaceuticals compared with the other countries. The dramatic increase in retail prices in Kurdistan was because of the swindles of the system by the pharmaceutical companies and some pharmacies. Informants illuminated that by "*The availability of pharmaceuticals is good in Kurdistan but it's very expensive to the patients, however more expensive than in neighbor countries*"(Informant no.6)

The example case in the study was the availability of pharmaceuticals in the treatment of the patients with Diabetes mellitus in different areas in Iraq compared with the Norwegian patients, regarding both the availability and pricing of different products that were essential and popular in diabetes treatment. In the table below (see table 8), the comparison is based on the available products for diabetes treatment in Norway (NoMA), and unpublished data from MOH institutions in Iraq, delivered to researcher on 01.06.2014. See appendix 5 to get a picture about the treatment access.

The diabetes medications were focused on in this study. A list of the diabetes medication access and availability in Iraq was made and sent to several informants, who helped in filling in the needed information. There is a very large variety in the treatment of both diabetes type 1 and 2 in the Iraqi pharmaceutical market. There are many pharmaceuticals in tablet form with both the brand and the generic of production even at national production level (domestic production for). The general theoretical availability for them is that they are dispensed free of charge for three months per patient for Diabetes Mellitus health centers in the hospitals and in the public health care clinics. The amount is decided by the physician according to the patient response and daily dosage.

It is not allowed to sell them in the private pharmacy, but this can nevertheless happen because of the "dirty job" described earlier. The amount delivered in DMC (Diabetes Mellitus centers) in hospitals is for 3 months use while in the public health centers is for one-month use. The variation depends on the central need committee. The deficiency in some items can lead to the buying of these items from the private pharmacies (or by dirty job).

Figure 14. Pharmaceuticals Access in Diabetes treatment Norway / Iraq, where √√ means very good access, √ means good access, X means limited access and XX means no access at all[12]

Access pharmaceuticals in Diabetes treatment	Norway	Iraq
Insulin analogues[a]	√	√
Apidra[b]	√	X
Blood sugar reduction pharmaceuticals excluding insulin[c]	√√	√√[d]
Aldose reduktase inhibitors	Under study	X
Insulin pump	√√[e]	XX
Blood sugar measurement device	√√[f]	√[g]

a) Including all types Insulin's, rapid, and middle, long and combination action insulin's as injection forms injection.
b) Extra rapid action insulin.
c) Biguanidderivater, sulfonamides, derivatives derivative of urea, Sulfonamides sulfonamide derivatives derivative of heterocyclic forbindelser.Kombinasjoner of blood glucose lowering drugs for oral use, Alfa glucosidase, Thiazolidinediones, Dipepitidylpeptidase 4 inhibitors and so on.
d) There are many companies produce the same drug in different prices in Iraq both bran products and generic is available (Access)
e) Insulin pump access in Norwegian market for 30 years ago. There are many types insulin pump in the market per 2014 .Insulin pump is a mechanical pump with different sizes and types, some of them with little slang and other without slang and have a remote control.
f) Every diabetes patient can get blood sugar measurement device, free or with payment, different companies with different products access in pharmacies and hospitals, the patients get the devices consumable with blue prescription and they are reimbursed in price.
g)Its partially available in the market with narrow variation ,the patient must buy it by himself without any insurance ,sometimes it's available in some public institutions(diabetes clinics) but the patients must buy the consumables self which are partially available in the private pharmacies.

The access of Insulin in vials, prefilled pens, ampules from Novonordisk and Sanofi Aventis are completely the same in Norway as in Iraq but the extra rapid insulin

[12] VV Very good access and XX no access completely

APIDRA is not available in Iraq per 2014. Amaryl and Metformin tablets are always available in the private pharmacies. The appendix 5 shows that some types of pharmaceuticals are not available anymore in Norway such as Mixtard vial from Novonordisk and Daonil^{R} 5 mg (glibenclsmide) which in Norway is available in 1,75mg and 3,5mg only.

The same informant provided the researcher with some pictures to illustrate the access to diabetes treatment and the access of the blood sugar measurement devices and its consumables. The pictures bellow provided from one of the informants (se figure 14.) shows two types of blood sugar devices type which access in the Iraqi market now only.

Figure 15. Blood sugar devices and consumable access in Iraqi market,the picture from one of private drug store in Iraq in 2015.

In the figure above and according to the informant and appendix 5, these devices are very restricted in the market. The most available one is Accu-Chek active. It's mostly available in the private sector with retail price 23$ for the device and 11$? In drug stores, community pharmacies and sometimes this device? Is dispensed with limitations and in some hospitals. The patients mostly buy their consumables, se appendix 5.

Pictures taken by the researcher from one of the Norwegian pharmacies illustrate the availability of the same variables (see figure 15).

Figure 16. Blood sugar devices and consumable access in Norwegian market,the picture from one of community pharmacy in Norway in 2015.

The insider pharmacist provided the study with pictures taken in January 2015 demonstrating the availability of Diabetes treatment in one of the Diabetic centers institutions of MoH the public sector (see figure 17).

Figure 17. Demonstrate the types of Insulin and some diabetes type 2 tablets that access in Iraqi market (public sector) in 2015.

The researcher took a picture of the accessible Insulin in one of the Norwegian community pharmacies at the same period, in January 2015 (see figure 18)

Figure 18. A picture demonstrates some types of Insulin are that access in Norwegian market in 2015.

According to the informant, the above pictures demonstrate the differences in the access of Diabetes treatment in Norway and in Iraq.

According to the informant, Insulin pump is not available in Iraq per January 2015. According to informants from Kurdistan all the types of brand and generic of the international pharmaceuticals for diabetes are in the market, but" *there is no access for any type of Insulin pump*" (Informant no.11)

There is Insulin in all forms (pen, vials and ampules). Informant from Kurdistan mentioned that in Kurdistan a special Diabetes centers access for consultations and treatment, these centers funded by special national human organizations funds and from oil funds .The patients there get regular medication free of payment. The patients can get simple devices for blood sugar measurement. The patients themselves buy - their consumables to measure the blood sugar at home. .This affects the good follow up for daily life to a patient with diabetes. See appendix no 5.

There is no support, no reimbursement or insurance coverage to this type devices but it is possible to measure blood sugar in hospitals or diabetes clinics .The devices could be available for some people who have relatives outside the country .The researcher provided the study with a picture to demonstrate many types of insulin pumps that exist in Norway.

In addition, and based on appendix no. 5, a random selection of price examples of insulin available in Iraq and Norway are shown in the table below (see table 9). The examples are taken in regarding to PPP,PRP and deductible price after reimbursement where the patient pays 36% of the PRP (DP) in Norway in US $ per 25.January.2015 (see Currency appendix 1). The prices in Norway were from the Norwegian community pharmacy Apotek 1.

Example

Table 8. Price example from appendix no 5

Insulin analogues	**Iraq**[13]			**Norway**[14]		
	PPP[14]	PRP[15]	DP[16]	PPP	PRP	DP
Novorapid flex pen® 3X5ml Novonodisk	14.10 $	17.5 $	6.3 $	35 $	50 $	19 $
Lantus solostar ® 5X3ml Sanofiaventis	20.32 $	24 $	8.64 $	52.6 $	73 $	27.5 $
Mixtard®30 Vial 10ml Novonordisk	2.3 $	Not available in private pharmacy	-------	Deregistered from the Norwegian market ,no more available		

According to the informants, there are diabetes Mellitus centers (DMC) in public hospitals which distribute completely free consultation and treatment for three months use it is free and no money included.

The table below shows a summary comparison based on both literature research and the result from the qualitative study to explain the Nordic model and the current Iraqi pharmaceutical model (see table 9).

[13] Price currency in US $ (se currency appendix)
[14] Pharmacy purchasing price
[15] Pharmacy Retail price
[16] Possible future deductible price

Table 9. The most important categories of the Nordic pharmaceutical model and the current Iraqi pharmaceutical model 2015.

Category	Denmark	Finland	Norway	Iceland	Swedish	Iraq
Pharmacy margins (PM)	PM regulated by law in the form of a linear mar-up based on a dispensary fee added to the PRP of each package.	Margins are digressive pharmacy margin scheme for all pharmaceuticals. They are regulated via a statuary markup, applicable for all pharmaceuticals, except NRT products.	PM consist of a percentage markup based on the PRP and a fixed amouCnt per package.	Wholesaler price up to 11.999 ISK, => retail margin 11% plus 868 ISK. Wholesaler price 12.000 ISK or more => retail margin 2% + 2.050 ISK.	Margins is regulated by statutory regressive margin scheme	Not regulated by law, individually differences in private sector
Average of pharmacy margins in % (profit)	21,8%	23%	~20 %	Not known	~20 %	Varies between 30-35% or more
Legislation	Pharmacy ownership is restricted to pharmacists and the multiple ownership is not allowed. No pharmacy chains established. POM are dispensed by community pharmacy including branch pharmacies and supplementary pharmacy.	98% of all community pharmacies are privately owned by pharmacists. The university owns 16 branch pharmacies.	81% of pharmacies are In ownership of 1 of the 3 large pharmacy chain, each vertically integrated with pharmaceutical wholesaler. POM mainly dispensed by	Pharmacist and license holder must be professionally responsible for the pharmacies operation.	The new legislation 2/3 in hand of private company, the rest is still owned by the pharmacy which is state-owned, so it is allowed for both public and private establishment of pharmacy. POM dispensed by community pharmacy, private	Pharmacy ownership is restricted to pharmacists in theory but the entrants have a big role in pharmacy business. No pharmacy chains. Every pharmacist

			community pharmacy and hospital pharmacy. The system is de-regulated.		and Apoteket owned by the state.	can have an independent pharmacy with his/her name.
Availability and delivery at pharmacy level	Almost all pharmaceuticals should be available immediately if this is not possible; it should be provided to the user within a reasonably being defined as less than 24 hours.	Have regulation regarding the pharmaceutical to be in stock. In general the majority of prescription can be filled immediately at maximum 24 hours	There is a law requirement availability medicine for the consumer within 24 hours	Registered pharmaceuticals should in theory be available immediately if this is not possible; it should be provided to the user as soon as possible	Almost all pharmaceuticals should be available immediately if this is not possible, it should be provided to the user within a reasonable time being defined as less than 24 hours.	Not regulated No obligation recommended in law.
Wholesaler margins	Not controlled based on the agreement between a wholesaler and the manufacturer	Not controlled	Wholesaler negotiation their margins with manufacturers ,the lowest margins in EU	Maximum price should in general (with a few exceptions) not exceed the average price in the other Nordic countries	Fix percentage margin	About 10-15%
Pricing system and reimbursement	Reference price system	No reference price system	No reference price system	Reference price system	Reference price system reviewed four times a year	Not available
Ceiling set to patient payment per year	Yes(exemption cart)	Yes(exemption cart)	Yes(exemption cart) 280 $ / year	Yes(exemption cart)311-470.42 Child/elderly/disabled-adult	Yes(exemption cart)about 216,79 $/ year	Not available

5 Discussion

The results of the study will be discussed in this part: first, the main findings of the study will be discussed, similarities and differences, with what other researchers have found. Then, the strengths and the weaknesses of the methods will be discussed and .finally, suggestions for future research and action are given.

5.1 Summary of main results

The results from the literature review showed that there was simply meagre literature on the issue of pricing and reimbursement of pharmaceuticals in Iraq. Therefore, an explorative study was needed on the system. In addition, a feasibility study for restructuring and reforming to increase the availability of medications was required to map the possibility to apply the Nordic pharmaceutical pricing and reimbursement model for Iraq. However, any reforming must be realistic and practical. This is to give complete benefit to the Iraqi patients with pharmaceutical system, better availability and affordability of pharmaceuticals as well as more effective treatment of diseases.

The study showed that the pricing system and state support for patients differs between the private and the public sector in Iraq. The current system in the public sector seems in theory to be good for the patient, but due to continuous underestimations of the need, coupled with stock-up and dirty-job spillover to the private sector, shortages of medicines are frequent. It is hard for patient´s' economy the in private sector because of the absence of the state support for the patients in this sector (no reimbursement in retail price for pharmaceuticals in private sector)

The qualitative interviews indicated that all the interviewees were positive towards a change, but several barriers were recognized such as the political situation, corruption and the "dirty job". In addition, many requirements need to be met in the current pharmaceutical system in Iraq as a pre-condition to the change toward the pharmaceutical reimbursement.

Finally in the diabetes case availability and accessibility in Iraq was compared to Norway. This showed that the treatment of diabetes in both types (Diabetes 1and 2) seem to have lower quality and availability in Iraq, as compared to Norway when it comes to Insulin treatment with insulin pump and the follow up of the daily blood sugar measurement. In addition to life style advices are given. The suitable food for diabetes patients is more available in Norway than in Iraq due to high level of information about the disease and the organized treatment for this group of patients in Norway .Both Norway and Iraq have diabetes organizations but the one in Norway has an important function in the patient's life to coordinate him in different methods, such as information, decision making in reimbursement process by the HTA bodies, research support in Diabetes area and so on. The Diabetes organization in Iraq has restricted function.

5.2 Discussion of the results

5.2.1 Discussion in relation to existing literature

According to another study on pricing and reimbursement in UAE (The United Arab Emirates) from 2012, the UAE invited international service providers to manage its facilities and established high standard in health service delivery special pharmaceutical system and private sector participation increased over the years (Ghaleb Ahmed Al Ahdab, 2012). Therefore it can be argued to be important to explore other health care systems.

A study from the strategic research and communication centre in Syria was published in 2012. It is about reforming feasibility of health care system in Syria and concluded that, the health care reforming and establishing of a new health care policy in Syria is critically important, not just to improve the physical and mental health of the people and enhance their sense of wellbeing, but also can improve the economic quality of the service. Realizing all the challenges to reform an old health care system to improve the future of the Syrian state and the Syrian people are not only the responsibility of the government but of: universities, scientists, the private sector and the Syrian people themselves (Safwan Kassas & Ammar Kahf, 2012). The Syrian study is in line with the result in this study, regarding cooperation and contribution of

different actors and the patient himself, - that cooperation between all stakeholders is needed in order to develop and implement a reform.

Another study in was done in Syria on the health care financing to map the satisfaction with the current public health care system. The study concluded that there is a need for health reform and that Syrian people are willing to support a national health insurance scheme. This satisfaction study was done to examine the willingness to participate in national health insurance (co-payment) (Mershed, Busse, & Ginneken, 2012).

The cultural similarity between Iraq and these countries(Syria and UAE) and the similar challenges in this region can make similarities in the project and aim in the same direction toward reforming and establishing of a new pharmaceutical system policy in the future for Iraq.

This study was the first one in this direction, to explore the reimbursement direction for patients in Iraq, but according to the efforts of the Iraqi MoH in Iraq, there were cooperation between the MoH in Iraq and WHO through many meetings to sign the Country Cooperation Strategy document for (2012-2017) CCS. The aim of these efforts was to ensure the achievement of health care system policy development to get better and to ensure the right of health to all Iraqis (IMoH, 2014; WHO, 2014).

An American study on the health care system in Iraq in November 2007, mentioned “the dirty job” problems in pharmaceutical system and market in Iraq (Munro, 2007). The study supports my findings about the "dirty job". It already existed then in the pharmaceutical market and it is still corrupting the pharmaceutical policy. Moreover, it could be one of the most common problems. It can prevent the success of the new pharmaceutical system because of the corruption and unsafe conditions.

This feasibility study can be the first step for Iraq toward the change and development in pharmaceutical policy toward pharmaceutical pricing and reimbursement Nordic model.

5.2.2 The potential feasibility of the Nordic pricing and reimbursement model for pharmaceuticals in Iraq

The answer to the study's aim is positive, the change can happen, but many efforts are needed. Some points in the Nordic model must be adapted to the Iraqi people. The most important point is the high taxes in all levels in the system. For example there are high taxes in wholesaler, pharmacies as well as the manufacture and import level of pharmaceuticals compared to Iraq.

Change in a pharmaceutical policy is needed and further future feasibility study and qualitative studies are required to complete the result of this study. There were trails toward the change in pharmaceutical system in Iraq; some informants mentioned examples about that but the corrupt political situation for Iraq stopped that.

The feasibility answer to this system is that it could be very good for patients because the patient can get help and economic support not only in the public health care sector, he will get it in private sector also. It could improve the availability and affordability of medications for all the Iraqi people. However, it will be difficult to apply the Nordic model because the study informants confirmed that the Iraqi patients used to use an old system, especially in regarding to free paying of medications in the public sector.

Many requirements need to be met to achieve that and the conditions and schemes adaptation is necessary. It could be a good system for certain types of low income patients the private sector only, but the services must improve. The pharmaceutical system is a type of insurance system, there is a complete stately support in the public sector, but the availability is bad. In the private sector, there is no support. The patient must pay by himself. There is a type of a new start of co-payment trials in Kurdistan only. I think it could be the first step towards a better and more including reimbursement system in Iraq.

The application of a new payment pharmaceutical system (reimbursement) similar to the Nordic one with availability of medications and high quality of pharmaceutical service is difficult to apply in Iraq because of the ”trust” problem between actors i.e. a

reliable system is needed for the pharmacy repayment from the state. The present bank system and financing process for reimbursement will be big problem in the absence of advanced computerized and electronic registration. Reliable and safe connections between different actors are needed, in order to be able to use electronic prescriptions and billing.

There is a need for a deeper feasibility study and future research regarding patients' reactions and patients' points of view. The informants said that the defect in the budget from the oil fund could alone lead to direct defect in the health care service in public and semi-public sector. Moreover, this is one of the most prominent and real problems in the pharmaceutical system today especially in public sector related to the chronic diseases treatment. The mono-resource for pharmaceuticals procurement budget could be one of the most important factors, which affect the availability of medications in public sector. In case of the budget defect it could cause a defect in the pharmaceuticals availability simultaneously. Therefore it is better to find a better resource for a better procurement such as patients' co-payments or taxes, but not high level of co-payments. This low level of patient co-payment in public sector could help the state to reimburse the medications in private sector also. Moreover, this would give benefit to the patients in case of a need to buy the medication from the community pharmacy also.

The "dirty job" is one of the problems that can destroy a new system implementation in Iraq. This problem has been noticed from the period after 2003 in the pharmaceutical Iraqi market. It had been documented by USAID (Munro, 2007) .The term "Dirty Job " in the field of health care system in Iraq, is defined by the people there as; the illegal behaviour of the healthcare professional inside the public sector institutions such as nurses and physicians and other health care staff; the patients illegal abuse of medications by selling it to get money and finally the pharmaceutical companies illegal business in Iraq.

Other problems and disadvantages of the fee free pharmaceutical system is that there is a big chance of abuse of the medications by patients and other users especially in public institutions because it is free of charge to the patients, there is

large waste of resources and only prescription pharmaceuticals (Al-Hemiary, Al-Diwan, Hasson, & Rawson, 2014)

The bad availability and affordability was the most prominent problem to the Iraqi patients both in Kurdistan and Iraq especially in Iraq, the informants confirmed that. The solution according to the informants is to increase the availability of pharmaceuticals and to establish pharmaceutical reimbursement system to support the patients in the private sector in addition to providing more economic support to the health system by taxes and low level of patient-payment.

In any case it seems to be better medications availability in Kurdistan but expensive and the change in pharmaceutical policy has already happened there. The chronic diseases medications can be obtained just for 1-5$ for 3 months use from the chronic diseases health care centres, while in Iraq, its just 500 ID=0.42 $.

The security and the political situation in Iraq are very important to offer stability in Iraqi pharmaceutical's market and can affect both the availability and affordability of pharmaceuticals to the Iraqi patients.

The results shows that there is a destruction of medication supplement in Iraq especially in public sector which makes the patients go to the private sector, some of the informants thought that the solution of this problem is to increase the generic medications to make pharmaceuticals more affordable. This might indicate that any change needs cooperation between different actors and patient to see the result just trying to initiate a change.

One informant thought that the political situation in Iraq and the pharmaceutical policy have a dramatic effect on any change in the system. I agree with this opinion because this could indicate that, the change must start with the reorganization of the private and the public sectors in order to get more stable pharmaceutical pricing system. As a result of the difficult and inaccurate procurement system, and lacking precision in estimating the pharmaceuticals needs every year, a shortage of some if not most of pharmaceuticals in public sectors existed.

5.2.3 Is it only to copy and paste the pharmaceuticals Nordic pricing and reimbursement model?

Possibly, it could be difficult to copy and paste the Nordic model directly to Iraq but the adaptation is necessary. The study indicates that there were disadvantages and problems with the Nordic pharmaceutical model for Iraqi people and these problems might be avoided. The main problem was that the Nordic system (Norwegian) is advanced and complicated to apply in Iraq regarding technology and advanced authority system (Helsedirektoratet, 2009).

The other problem was that the patient acceptability to the price level in reimbursement phase (example Novrapid flexpen 3X5ml is free of charge in public institutions but it costs the patient about 6.3 $).It could be difficult for the patients to pay 36% or possibly any patient co-payment in public sector, especially at the start of the a new reimbursement process. The reimbursement price level could be helpful in other pharmaceuticals examples, like the expensive ones.

So, it is possible and necessary to inform the Iraqi patients about the aim of reimbursement in private sector and low level patient co-payment in the public sector. It is necessary to inform the Iraqi patients about the pharmaceutical reimbursement to get full and complete availability and complete treatment benefits without any gap or absence of the decided treatment due to the availability problem.

The study shows that the prices in private sector could be high for the Iraqi patient, but the margins percentage of pharmacists and pharmacy appears to be higher in Iraq than in Norway.

There are other important differences between the pharmaceutical systems in Iraq as compared to Norway, for example the possibility to get all the medication by the same system in both community pharmacy and the hospital pharmacy. In Norway, there is no public sector like in Iraq, but inpatients in hospitals get medical treatment there. The private sectors in both countries have similar setup, apart from the reimbursement part. This could affect the availability of medications positive regarding to the patients need and facilities.

(I.e.as a patient in one of the Nordic countries, one can get his treatment anywhere in the country and every community or hospital pharmacy has responsibility to provide the patient order of pharmaceuticals within 24/48 hours). While in Iraq, the free public market of pharmaceuticals completely separated from private market. In addition to that, the unstable availability in the free public market in Iraq could give dramatically reduction in the effectiveness of medications and the treatments efficiency.

In theory and according to the Iraqi law the patient must get insulin and other chronic disease medications for free, but what if there's a defect in the availability, so the patient might buy it from the private sector (community pharmacy) for full price and this could happen often in Iraq because of the political situation.

5.2.4 The requirements needed to get new pricing and reimbursement system for Iraq in comparing with Nordic countries

According to the results of qualitative interview of the study, all the interviewees gave the impression that a change in the current pharmaceutical system is necessary, but there are many requirements needed to get a new pricing and reimbursement system for Iraq in line with the Nordic pharmaceutical pricing and reimbursement, and I agree with them.

- **"Trust" between the different actors**. Example: pharmacists, wholesalers, pharmaceutical companies, banks and government in order to guarantee the money repayment to the pharmacist as a type of pharmacy business.
- **Time factor needed** to get a trial reimbursement system in place of the current system in some cities and pilot pharmacies can be helpful.
- **Fix margins value in private pharmacies** as in the Nordic countries, new pricing policy needed according to the international models.
- **Low level co-payment** from the patients as a type of civil cooperation in public sector to get better service as in the Nordic countries with taking into account the economic ability for payment and may be adapt the Norwegian reimbursement model with suitable deductible percentage in private sector.
- **Patient's agreement** to accept the co-payment needed.

- **More organized administrative system** needed to reduce the corruption in the pharmaceuticals area.
- **Good contracts and guarantee** between the government and the private sector needed.
- **Reduction of the entrants and the "dirty jobs"** which are the biggest problem, therefore it must be reduced to the level of the Nordic countries to protect profession rights and the job regulation in pharmaceutical market.
- **The computer systems** in Nordic countries have a successful method to make the distribution and the direct sale of pharmaceuticals easy and documented by using advanced software programs such as Pharma-Pro[17] in Norway (Clickindia, 2015). The same computerized system needed in Iraqi pharmaceutical market (wholesale, pharmacy and authority)**.**

5.3 The choice of the method

In the following part of the study, the strengths and the weaknesses will be discussed by discussing the selected methods, and then assessing the quality of the interviews from the concept of validity, reliability and generalizability of the results.

This is the first study in Iraq with pharmacists as stakeholders and in spite of the technique problems with the internet collection, the data needed to answer the issue of the project was collected. In addition to the misunderstanding (which was one of challenges in the interviews) of one of my informants from Iraq about the reimbursement system and insurance system. Some informants gave me new cues that motivated me to recruit a new informant who gave me more data with more benefits for the project.

The aim or the purpose of the study decide which type research methods can be used (Malterud, 2011). The study was carried out in Norway, but it could be better if it had been partially carried out in Iraq to have higher validity. More than one method was used; qualitative method because the aim of the study was partially a community

[17] Pharma-Pro definition in page 14

research and qualitative methods are suitable for in-depth understanding of phenomena, including phenomena that little is known about, and in depth-understanding was the purpose of the study.

Interviewing stakeholders in order to collect data on phenomena that little is known about, is an approach that has been used previously in Burkina Faso and in Iceland. An article from Tropical Medicine and international health from 2006 describes a study about Burkina Faso health system (Haddad et al., 2006). Another study from 2008 describes the feasibility to apply the Swedish model to value- based price of pharmaceuticals in Iceland (Björnsdóttir, 2008).Those studies used the same method of qualitative interviews that sparked the researcher's interest in in using the same approach.

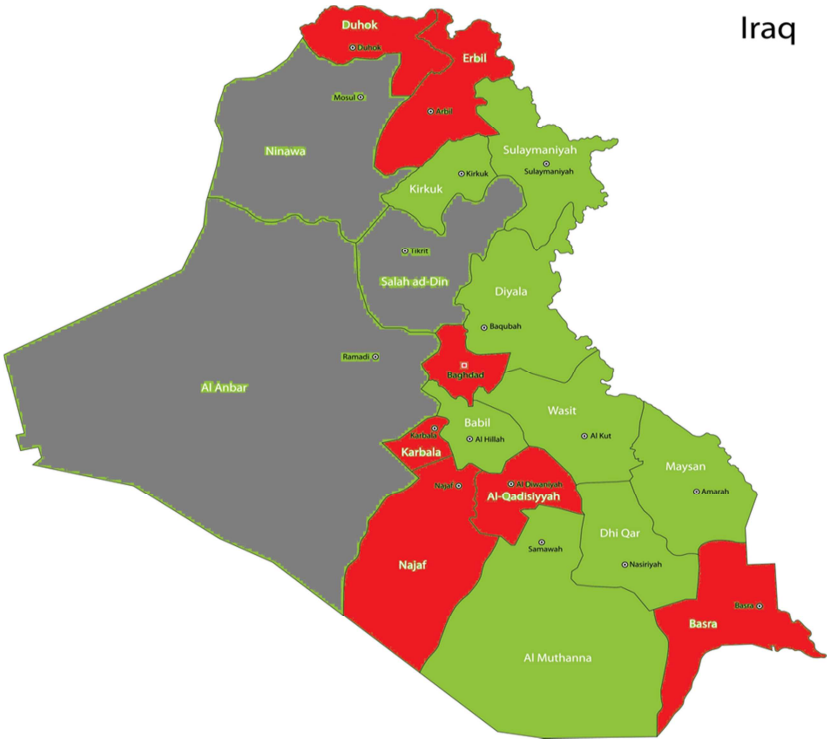
The strategy of the study method depended on the qualitative method to explain the topic characteristics and describe the meanings and thoughts about the topic issue, because of the materials of the study were interviews and text the qualitative analysis was the suitable method to choose (Malterud, 2011).

In this study, a mixed methods approach served to answer the research question. The use of qualitative semi-structured interviews helped the researcher to ask clarifying questions which helped to ensure that the topics in the interview guide was exhausted. This type method could be better if the focus group interview be used at the same time for better discussion and could help to get more attitudes and experiences from the informants but it was not possible due to the project location and the researcher travel restrictions. In addition, the number of informants could be more but the time restriction and the busy days for informants (pharmacists). A higher number of informants could be increase the validity of the research in general. My last two interviews in the study in December showed that data appeared to be saturated (no new information added), so it can be argued that I did not need more informants. In addition, in qualitative studies, the high number of informants is not always an indicator to the creditability and validity of the study (Morse, 2000).

5.3.1 Informants and recruitment

Initially 20 informants had been recruited and invited to participate. It was desirable to strength the validity of the study. They were from Norway, Denmark, Sweden and Iraq, but only nine wanted to participate. Invitation letters were send to nine pharmacists from Nordic (Sweden, Norway and Denmark) with Iraqi background, but just 2 of them wanted to participate, two responded with ”no”, four did not respond and one answered “yes” but pulled back .On the other side, eleven Iraqi pharmacists from Iraq had been recruited and invited, but only seven of them wanted to participate, two answered with “no” and two did not respond. In December, two of Iraqi respondents responded by mail and were willing to participate. The sample area of the study in Iraq is demonstrated by figure 19 below.

Figure 19.Map of administrative division of Iraq and the including / excluding area of the study.



In the figure above (see figure 19) the red color shows the division area of Iraq included in the study ,the gray color shows the excluded area from the study (crisis area) and the green areas have the same criteria for the red area and the same conditions and the study could be used or generalized there.

To do the qualitative interviews, respondents were recruited, with basically pharmacists and professionals who know what is going on in the pharmaceutical system in Iraq and Nordic countries' and have knowledge about pharmaceutical pricing and reimbursement system. An attachment including an Executive summary about the Nordic pharmaceutical system was send to make that easy to the informants from Iraq.

Nevertheless, the challenge was that not all informants had time to read it, so I might inform them in the introduction of interview or within the interview time. Pharmacists

from Iraq were included who have diverse mix of knowledge from different pharmaceutical sectors, and from different geographic regions in Iraq (North, south and middle); such as pharmacy leaders, whole store owners, academies, some of the informants have a children with Diabetes type1.

Data saturation was achieved and nothing new added by the last informant .The data saturation is achieved when there is no new information coming by informant and the interview repeated (Malterud, 2011).The number of informants was not high but the credibility of them was high because most of them were decision makers and academics with long practice in pharmaceutical area.

An important criterion for good research validity is that the informant feels safe as regards sensitive information and their identity (Steinar Kvale & Brinkmann, 2014).The informants were informed about the anonymities to make them safe and talking freely during the interview. It could also have been preferable if the interview had taken place in the informant office, but it was difficult and the interviews take place by Skype, relying on Skype's stated policy for safety and privacy.

5.3.2 The interviews

The researcher (interviewer) was new in this area, the qualitative research area, and was restricted to the interview guide especially in the first interview. The interviewer was relatively inexperienced in an interview situation and this could make the validity weak especially at the beginning of the first interview. After a couple of interviews were conducted, the situation became more accustomed and there was more ease to listen and to discuss the informant's answers.

All the interviews had the same interview topic guide main questions (Steinar Kvale & Brinkmann, 2014). The interviewer was as neutral as possible in order not to affect the answer of the informants, but the lack of research experience as interviewer can possibly have affected the informants.

5.3.3 Transcription

The transcription of the interviews was done soon after each interview either at the same day or at the next day. The sound was clearly recorded by help of speakers. The sentences were clearly pronounced in the researcher mother language (Arabic) or in English for some terms and words. All the interviews had been listened four times to ensure that everything had been written down correctly in transcription and written in Arabic text and translated to English as a whole. The same person (me) did all the process, transcription, translating and analysis with help of the supervisor in the technique. The translation has been done by the Microsoft translator in word program and by the researcher.

5.3.4 Analysis

This part of the study was the most time consuming, and efforts to work with the interviews, listening many times, transcription and translation before the analysis process were quite tedious. In qualitative interviews , the interviews must be transcribed, listened to and read many times to get the overall impression of the information (Patton, 2005).

The analysis of interviews was done with meaning condensation, which is a strategy for analysis of qualitative data. Meaning condensation is a descriptive and explorative method for thematic extraction for different types of qualitative data such as interview studies and analysis of written text with four steps procedures to get the final description and concept of the qualitative analysis meaning (Steinar Kvale & Brinkmann, 2014; Malterud, 2011).
The same person did the analysis. Here several researchers' opinion could have increased the validity of analysis.

5.4 Validity

The validity describes how well founded and useful the results of the study are. The importance of validity in the study is to ensure that the results can be used effectively in the future research and that we use the information from the study (Morse, 2000). It is also necessary to assess the researcher's skill and credibility which also has influence on the quality of the results/data (S Kvale, 2009).The validity of this study is depending on the finding of reasonable conclusion. Although the communication validity and dissemination of information between informants and the researcher was valid because the researcher have the same mother language and the dissemination of information was high in the interviews. This study can be useful in Iraq to improve the pharmaceutical system.

5.5 Reliability

The reliability of the study describes the result accuracy and if the results could be used by other research at other time or in the future (S Kvale, 2009). The method of the project is to use the interview with semi-structure topic questions. It could be useful to other researchers with the same methods.

5.6 Generalizability

According to the project results, it will be relevant to look at weather these results can then be applied and generalized just in Iraq. The response to the reimbursement system in the different areas could differ, according to a variety of conditions. There

is no guarantee at the project results that can be generalized to all of Iraqi's regions. They apply to some of them, such as Kurdistan, and some politically stable cities in Iraq such as Najaf and Karbala. The result cannot be generalized in other countries because the data and the informants dealt with the application of the Nordic pharmaceutical system in Iraq. It is generally difficult to generalize? qualitative research because of the low number of informants (Malterud, 2011).

5.7 Future recommendations, action and research

Iraq does not lack the intellectual and economical capital needed to start pharmaceutical service research and development, but Iraq lacks the stability right now. The government can take action to provide a new development trails and research in pharmaceutical pricing and reimbursement models existing in the world. Very few Middle Eastern countries have realized the importance of pricing and reimbursement models such as (UAE and Turkey examples). In addition to that, the government can take action in pharmaceutical policies to encourage greater intellectual interchange between Iraq and the international reimbursement model providers.

New pricing and reimbursement system needs to be established in Iraq by local /regional research. New pharmaceutical regulations, authorizations and policy are needed in the future. Training of highly qualified pharmaceutical system managers and administrators where the pricing evaluation can be analysed skilfully and professionally in addition to in service training needed about the pricing and reimbursement to increase the expertise in this area. IT systems modifications, development, and automation of the prescriptions and the communication / E prescription and new pharmacy retail software are required. Government can take action to establish national electronic information system and an electronic transection of payment is important to access.

6 Conclusion

There is a need for pharmaceutical pricing system and payment reforming in Iraq according to the pharmacists, since all the Iraqi patients have a human right to the principle of the rational use drug. The Iraqi people need to change or improve the current pharmaceutical system to get better health in the future.

- All the interviewees from Iraq and Norway believed that there are possibilities to apply a new pharmaceutical pricing and reimbursement system in Iraq, but gradually. The study shows that the change in Iraq has already started as a first step toward reforming of the pharmaceutical pricing system in some parts.
- Iraq has the intellectual and economic ability to get a better pharmaceutical system, but many requirements are needed, e.g. if using the Nordic model an adaptation of the Nordic pharmaceutical pricing and reimbursement models is necessary.
- Iraq is in need of changing or improving the pharmaceutical system policy and modernization of the computerizing system to improve any change toward the pharmaceutical Nordic model before any change.
- According to respondents, other barriers to be overcome before being able to implement such a system are for example: especially of the “dirty job” among physicians and pharmaceutical companies and the abuse of the free public system and the transfer of pharmaceuticals from the free to privatized system. This part of the problem might be partially or fully solved with some sort of good surveillance system.
- The current Iraqi pharmaceutical model can be good regarding to the public sector in related to the cost free medications in this sector. Nevertheless, the inadequate availability of pharmaceuticals is a problem for the Iraqi patients. It could be better for Iraqi patients to get economic support for pharmaceuticals in the private sector as well i.e. a more comprehensive pharmaceutical reimbursement system to reduce the cost for patients in private sector. In this way, it will be better availability and affordability to the patients according to the rational use of drug principle. However, there is a probably a financial

issue and new financial models are needed with sharing in payment between the state and the patient in private sector.

- Further feasibility studies and efforts in the future are recommended to manage to come up with new successful solutions to introduce new pricing and reimbursement model in pharmaceuticals to improve the health service to Iraqi people.

During the time of the study, it was clear that the situation in Iraq was more concerned about the security and the political stability. Therefore, possibly the solution could be mostly the political stability, or preventing spillover from free public system to semiprivate system with taking into consideration the low level of patients copayment in the public sector and private system with reimbursement and economic support. More feasibility studies of pharmaceutical reimbursement in Iraq in the future are needed to solve these issues.

Reference list

Al-Hemiary, N. J., Al-Diwan, J. K., Hasson, A. L., & Rawson, R. A. (2014). Drug and Alcohol Use in Iraq: Findings of the Inaugural Iraqi Community Epidemiological Workgroup. Substance use & misuse.

Almarsdóttir, A. B., & Traulsen, J. M. (2009). Multimethod research into policy changes in the pharmacy sector—the Nordic case. Research in Social and Administrative Pharmacy, 5(1), 82-90.

Al Hilfi, T. K., Lafta, R., & Burnham, G. (2013). Health services in Iraq. Lancet, 381(9870), 939-948. doi: 10.1016/s0140-6736(13)60320-7

Björnsdóttir, I. (2008). FEASIBILITY OF CHANGING REIMBURSEMENT STRATEGY STRATEGY FOR PHARMACEUTICALS IN ICELAND - BASED PRICING.

Burnham, G. M., Lafta, R., & Doocy, S. (2009). Doctors leaving 12 tertiary hospitals in Iraq, 2004–2007. Social Science & Medicine, 69(2), 172-177.

Burnham, G. M., Lafta, R., & Doocy, S. (2009). Doctors leaving 12 tertiary hospitals in Iraq, 2004–2007. Social Science & Medicine, 69(2), 172-177.

CIA. (2014). Country Comparison :: Crude oil - proved reserves. Available from https://www.cia.gov/library/publications/the-world-factbook/rankorder/2244rank.html Retrieved 08.09.2014

Clickindia. (2015). Pharmacy retail software Available from http://www.clickindia.com/detail.php?id=6681723 Retrieved 26.01.2015

Colourbox. (2014). The Nordic countries map. Available from https://www.colourbox.com/products coulorbox Retrieved 12.12.2014

Commission, E. (2013, 05.02.2013). Pricing and reimbursment of Medicinal products.

Economist. (2013). Politicians-both-right-and-left-could-learn-nordic- countries-next-supermodel. Available from http://www.economist.com/news/leaders/21571136 Retrieved 28.04.2014, from The economist

Economist. (2014). An extreme Islamist group that seeks to create a caliphate and spread jihad across the world has made dramatic advances on both sides of the Syrian-Iraqi border. Available from http://www.economist.com/news/middle-east-and-africa/21604230-extreme-islamist-group-seeks-create-caliphate-and-spread-jihad-across Retrieved 09.09.2014

Festøy, H., & Yu, L. M. (2011). PHIS Pharma Profile Norway 2011. Vienna: Pharmaceutical Health Information System (PHIS).

FIP. (2012). 2012 FIP Global Pharmacy Workforce Report Available from http://www.fip.org/files/members/library/FIP_workforce_Report_2012.pdf International pharmaceutical Federation Retrieved 15.01.2015

Flood, J. W. (1889). Norges Apothekere i 300 Aar: (1588-1889). Kristiania: Den norske Apothekerforening.

García-Altés, A., Ondategui-Parra, S., & Neumann, P. J. (2004). Cross-national comparison of technology assessment processes. International journal of technology assessment in health care, 20(03), 300-310.

Grunfelder, J., Roto, J., Rispling, L., Dubois, A., Johnsen, I. H., Olsen, L. S., & Weber, R. (2014). State of the Nordic Region 2013 (Report). Available from http://www.diva-portal.org/smash/get/diva2:700279/FULLTEXT01.pdf divia- portal. (2014/1). Retrieved 16.01.2015, from Nordic Center for spatial Developement http://www.diva-portal.org/smash/get/diva2:700279/FULLTEXT01.pdf

Haagensen, K. M. (2013). Nordic statistical yearbook. Available from http://www.ssb.no/en/befolkning/artikler-og-

publikasjoner/_attachment/148796?_ts=1425b277d80 Norden Retrieved 27.04.2014, from Norden

HELFO. (2014). What is a healthcare exemption card? Available from http://www.helfo.no/privatperson/frikort/Sider/default.en-GB.aspx Retrieved 21.11.2014

Helsedirektoratet. (2009). Individuell refusjon - Forslag til nytt system for refusjon av legemidler etter individuell søknad innenfor blåreseptordningen. Available from http://www.helsedirektoratet.no/publikasjoner/individuell-refusjon-forslag-til-nytt-system-for-refusjon-av-legemidler-etter-individuell-soknad-innenfor-blareseptordningen/Sider/default.aspx helsedirektorate Retrieved 09.01.2015, from helsedirektorate

Hesse-Biber, S., Dupuis, P., & Kinder, T. S. (1991). HyperRESEARCH: A computer program for the analysis of qualitative data with an emphasis on hypothesis testing and multimedia analysis. Qualitative Sociology, 14(4), 289-306.

IIG. (2014). Overview: Kurdistan Region of IraqHealth. Available from http://www.investingroup.org/publications/kurdistan/overview/health/ Retrieved 20.11.2014, from Invest in Group (IIG)

IMoH. (2014). Iraqi Minister of health Available from http://www.moh.gov.iq/index.php MoH Retrieved 12.12.2014

Independent. (2014). The old partition of the Middle East is dead. I dread to think what will follow (website). Available from http://www.independent.co.uk/news/world/middle-east/robert-fisk-the-old-partition-of-the-middle-east-is-dead-i-dread-to-think-what-will-follow-9536467.html Retrieved 15.07.2014

Kanavos, P., Vandoros, S., Irwin, R., Nicod, E., & Casson, M. (2011). Differences in costs of and access to pharmaceutical products in the EU. Available from

http://www.lse.ac.uk/businessAndConsultancy/LSEConsulting/pdf/pharmaceuticals.pdf Retrived 20.02.2015

Karin Wiedenmayer, R. S. S., Clare A. Mackie,Andries G. S. Gous. (2006). Developing Pharmacy Practice - A Focus on Patient Care (book). Available from http://www.who.int/medicines/publications/WHO_PSM_PAR_2006.5.pdf Retrieved 12.01.2014, from WHO

Kheir, N., Zaidan, M., Younes, H., El Hajj, M., Wilbur, K., & Jewesson, P. J. (2008). Pharmacy education and practice in 13 Middle Eastern countries. American journal of pharmaceutical education, 72(6).

Kristiansen, I. S., & Pedersen, K. M. (2000). [Health care systems in the Nordic countries--more similarities than differences?]. Tidsskr Nor Laegeforen, 120(17), 2023-2029.

Kinder, S. (2008). HyperResearch (Version 2.8)[Computer software]. Randolph, MA: ResearchWare.

Kristiansen, I. S., & Pedersen, K. M. (2000). [Health care systems in the Nordic countries--more similarities than differences?]. Tidsskr Nor Laegeforen, 120(17), 2023-2029.

Kvale, S. (2009). og Brinkmann, S.(2009). Det kvalitative forskningsintervju, 2.

Kvale, S., & Brinkmann, S. (2014). Den kvalitativa forskningsintervjun: Studentlitteratur.

Larsen, A. K. (2007). En enklere metode. Veiledning i samfunnsvitenskaplig forskningsmetode.

Legemiddelverket, S. (2014a). CHANGES IN STEPPED PRICE SYSTEM AND PHARMACY MARK-UP SCHEME - 2014. Available from http://www.legemiddelverket.no/English/price_and_reimbursement/Documents/Changes%202014%20(2).pdf Legemiddelverket Retrieved 21.11.2014

Legemiddelverket, S. (2014b). Price and reimbursement Available from http://www.legemiddelverket.no/English/price_and_reimbursement/Sider/default.aspx legemiddelverket Retrieved 23.11.2014

Library, M. (2012). Population density. Med library .org open source encyclopedia

Library, M. (2014). Nordic countries Available from http://medlibrary.org/medwiki/Nordic_countries Retrieved 16.01.2015

Lovdata. (2014a). legemiddel loven Available from http://lovdata.no/dokument/NL/lov/1992-12-04-132?q=lov+1992-12-04+nr+132 lovdata Retrieved 12.05.2014

Lovdata. (2014b). Lov om apotek. Available from http://lovdata.no/dokument/NL/lov/2000-06-02-39 lovdata Retrieved 12.05.2014

Lyfjaverðskrá. 2015. Available from http://lgn.is/gogn/lyfjaverdskra_01_2015.pdf. Retrieved 20.02.2015

Magnussen, J., Vrangbæk, K., & Saltman, R. (2009). Nordic Health Care Systems: Recent Reforms And Current Policy Challenges: Recent Reforms and Current Policy Challenges: McGraw-Hill International.

Malterud, K. (2011). Kvalitative metoder i medisinsk forskning [Qualitative methods in medical research] Universitetsforlaget: Oslo.

Martikainen, J., & Rajaniemi, S. (2002). Drug reimbursement systems in EU member states, Iceland and Norway: Kelan tutkimusosasto.

Mershed, M., Busse, R., & Ginneken, E. (2012). Healthcare financing in Syria: satisfaction with the current system and the role of national health insurance—a qualitative study of householders' views. The International journal of health planning and management, 27(2), 167-179.

Morse, J. M. (2000). Determining Sample Size. Qual Health Res, 10(1), 3-5. doi: 10.1177/104973200129118183

Munro, D. (2007). Ireaq private sector growth and employment generation Retrieved 17.04.2007, 2007

Nationsonline. (2014). Countries of the World by Area. Available from http://www.nationsonline.org/oneworld/countries_by_area.htm Retrieved 15.01.2015

NoMA. (2014a). The Norwegian health care system and pharmaceutical system. Available from http://www.legemiddelverket.no/English/the-norwegian-health-care-system-and-pharmaceutical-system/Sider/default.aspx Legemiddelverket Retrieved 21.11.2014

NoMA. (2014b). The Norwegian Medicines Agency NoMA. Available from http://www.legemiddelverket.no/English/Sider/default.aspx Retrieved 28.04.2014

Norden. (2014a). About the Nordic Welferd Model. Available from http://www.norden.org/en/about-nordic-co-operation/areas-of-co-operation/the-nordic-welfare-model/about-the-nordic-welfare-model norden Retrieved 26.04.2014, from Norden

Norden. (2014b). Financing of Nordic council Available from http://www.norden.org/en/om-samarbejdet-1/financing Nordic Council Retrieved 17.01.2015 http://www.norden.org/en/om-samarbejdet-1/financing

NSD. (2014). Obligation to notify (23.12.2014). Available from http://www.nsd.uib.no/personvern/en/notification_duty/ Norwegian Social Science Data Services (NSD), from Data protection official for research

OECD, I. (2011). Health at a Glance 2011. Available from http://www.oecd.org/els/health-systems/49105858.pdf Retrieved 15.01.2015, from OECD Indicators. Available from http://dx. doi. org/10.1787/888932525590

Patton, M. Q. (2005). Qualitative research: Wiley Online Library.

Report, T. (2013). Kurdistan aims to be a regional healthcare hub. Available from http://www.the-report.net/iraq/kurdistan-region-sep2013/683-health-kurdistan-s-aims-to-become-a-regional-healthcare-hub Retrieved 20.11.2014, from The Report Company

Safwan Kassas, & Ammar Kahf, P. D. A. M. (2012). Health Care Policy in Future Syria. Retrieved 17.11.2012, 2012

Skype. (2014). Skype privacy policy. Available from http://www.skype.com/en/legal/privacy/ Skype Retrieved 20.02.2014

Sorenson, C., Drummond, M., & Kanavos, P. (2008). Ensuring value for money in health care: the role of health technology assessment in the European Union: WHO Regional Office Europe.

Sjúkratrygginga Íslands .2015. Medicinal products. Available from http://www.sjukra.is/lyf-og-hjalpartaeki/lyf/greidsluthrep/ .Retrieved 20.02.2015

Tawfik-Shukor, A., & Khoshnaw, H. (2010a). Health system structure and governance in Kurdstan Personal e-mail attachment from the auther in 12.01.2015.

Tawfik-Shukor, A., & Khoshnaw, H. (2010b). The impact of health system governance and policy processes on health services in Iraqi Kurdistan. BMC international health and human rights, 10(1), 14.

UN. (2014). Iraqi Crisis Available from http://www.un.org/en/ Retrieved 09.09.2014, from UN

Van Mil, J. W., Schulz, M., & Tromp, T. F. (2004). Pharmaceutical care, European developments in concepts, implementation, teaching, and research: a review. Pharm World Sci, 26(6), 303-311.

Vogler, S., Arts, D., & Sandberger, K. (2012). Impact of pharmacy deregulation and regulation in European countries. Available from http://whocc.goeg.at/Literaturliste/Dokumente/BooksReports/GOeG_FP_PharmacyRegulationDeregulation_Summary_March2012.pdf Retrieved 16.01.2014, from Commissioned by Danmarks Apotekerforening (Association of Danish Pharmacies)

WHO. (2011). Country Profile of Iraq. Available from http://www.who.int/medicines/areas/coordination/Iraq_PSCPNarrativeQuestionnaire_01022012.pdf Retrieved 02.12.2014, from WHO

WHO. (2014a). GPP. Available from http://www.who.int/en/ Retrieved 15.01.2015

WHO. (2014b). Ministry of Health of Iraq and WHO sign Country Cooperation Strategy 2012–2017 . Available from http://www.emro.who.int/irq/iraq-news/moh-and-who-sign-the-country-cooperation-strategy-2012-2017.html emro.who Retrieved 02.12.2014, from World Health Organization WHO

WHO, E. (2013). Goverment of Iraq ,Ministry of health ,The Iraq public sector modernization,assessment and functional review report Available from http://applications.emro.who.int/dsaf/EMROPUB_2013_EN_1537.pdf?ua=1 Retrieved 23.11.2014, from WHO

WHOCC. (2011). PPR Conferance 2011 Country Poster book. Available from http://whocc.goeg.at/Downloads/Conference2011/PraesentationenPPRIKonferenz/general_PPRI%20conference%202011%20Country%20poster%20book.pdf Retrieved 30.04.2014, from WHOCC

Wikimedia. (2004). Nordic countries Wikimedia

Wikipedia. (2015). Iraq war map.

Worldlifeexpectancy. (2014). WORLDHEALTHRANKINGS live longer live better. Available from http://www.worldlifeexpectancy.com/sweden-diabetes-mellitus World Life Expectancy Retrieved 16.01.2015

Appendix

Appendix 1 **Currencies exchange rate**

Exchange rates published on 20.January .2015 by the Norwegian Central Bank

Currencies	**Currency / 1 Euro €**
AD	1.14
DKK	7.46
ID	1339
NOK	8.8
SEK	9.33
ISK	152.01

Appendix 2. Invitation letter for interview and consent for participation

UiO : University of Oslo

Invitation letter to the study

Feasibility of the Nordic pricing and reimbursement system for Iraq

-Norway as a case

Dear _____

My name is Ashwak Hamza and I am a master student at the School of pharmacy, University of Oslo. I am conducting a research study, where I am studying the pharmaceutical reimbursement systems and regulation of pharmaceutical prices in the Nordic countries (Norway, Sweden, Iceland, Finland, and Denmark) and in Iraq. The study aims at exploring the potential feasibility of Nordic pricing and reimbursement model for pharmaceuticals in Iraq. I hope that both the Iraqi and the Nordic society will benefit from the study results in the future, especially patients in Iraq in need for costly medication for treatment for chronic diseases.

With this letter I want to invite you to be interviewed about the topic. The interview will take place by Skype\ telephone, and it will be audiotaped so that I can analyze the discussion. The tapes will only be reviewed by members of the research team who will transcribe and analyze them. The use of Skype will be secure according to Skype legal privacy policy http://www.skype.com/en/legal/privacy/ and they will then be deleted.

You don't have to answer any question that you don't wish to. It is voluntary to participate in the project, and you can at any time choose to withdraw your consent without stating any reason and participation is confidential. Study information's will be kept at a safe location at the University of Oslo. The result of study will be published but without any identifiers for individual informants. Date of project completion will be in 31.05.2015. Don't hesitate contacting us if you have any further questions or concerns. You may contact me or my first supervisor Ingunn Björnsdottir, Associate Professor at the Department of Pharmacy, by telephone: *+47-22856650* or email: *ingunn.bjornsdottir@farmasi.uio.no*

Thank you for considering to participate, it would mean a lot to me. I will call you within the next week to see whether you are willing to participate.

Sincerely,

Ashwak Hamza

Telephone: 004745038251
Email:hamzaak@student.farmasi.uio.no

The study has been notified to the Data Protection Official for Research, Norwegian Social Science Data Services,(NSD).

UiO : University of Oslo

Informed consent for participation in the study

Feasibility of the Nordic pricing and reimbursement system for Iraq

-Norway as a case

I have received information about the project and am willing to participate

- o I agree to participate in the interview
- o
- o
- o

(Signature and date)

Appendix 3. The interview topic guide

UiO : University of Oslo

Feasibility of the Nordic pricing and reimbursement system for Iraq

Norway as a case

Interview guide for my informants in Iraq and in Norway

Pricing model:

Please describe, how prices of pharmaceuticals (medications) and also how the margins (mark-up) in Iraqi community pharmacies (private) and public pharmacies

How do you think the pricing system of medications (pharmaceuticals) works today? *(Who benefits and who does not?)*

To what extend (as a pharmacist) do you think the pricing system of medications now could be changed in future? What is the best method (way)?

Reimbursement system

What comes to mind when I say “reimbursement”(medical insurance)? What other terms could be used regarding similar arrangements in Iraq? Can you describe the reimbursement system (the health care service, medications, and co-payment) for patients in Iraq today?

How do you think the medications system (pharmaceutical reimbursement) works now? (*How could it be improved, who benefits and who does not?)* What do you think is needed to be done in the future to help patients get more affordable medications in private pharmacy? How can Iraqi public health system secure the medications availability for the patients?

Do you think changes can happen to develop pharmaceuticals policy (medications system) in that direction (I mean the medications/pharmaceuticals reimbursement direction) in the near future in Iraq?

Did you find time to read the attachment information about the Nordic reimbursement system? If the answer is (Yes); what do you think about the Nordic reimbursement system, feasibility of it for Iraq?

How do you think different actors would react to this idea e.g. community, pharmacy (private pharmacy), governments, and patients?

Appendix 4. Example of transcription

Interview with K, regarding pharmaceutical pricing model and pharmaceutical system (reimbursement) in Iraq.

Saturday, 04.09.2014 K = [redacted] =informant AS=interviewer, Ashwak Hamza

Translation of my informant from the consulant clinics pharmacy in Kurdistan (a semi private pharmacy owner) time of iterviwe 1,07 hr

My technique method for oversetting was depending on Microsoft translator on word 2010 program and my Arabic understanding to get the right meaning for my informant. The translation was done by one paragraph translation to get the approximate and most accurate meanings.

في بداية المقابلة حاولت اذكر بعض النقاط للمشرك ورغم ضعف النت والصوت لكن تم التسجيل والبدء بالمقابلة بما يلي يلي

١-ستكون المقابلة غير معلنه

٢-شرحت مقدمه مختصره عن البحث وتسميته والنظام الدوائي والتسعير في الدول الاسكندنافيه

٣ -وضحت ان لغة المقابلة يختارها اللغه عربي -إنكليزيه -نرويجي

٤- الحوار سيكون حر

٥-قد يحصل خلل فني فيتم اعادة الاتصال

المشارك كان مشغول بالأجابه علي التلفون وهو مدير لقسم الصيدله في دهوك التابع لوزارة الصحه في كردستان

آشواق : ممكن تقدم نفسك ؟

[redacted]

املك صيدليه واديرها في القطاع الخاص وعملي يدخل ضمن العيّاده الاستشارية كان عندي صيدليه عاديه وبعدها تحولت الى العيادات الاستشارية المحدودة الأرباح والأسعار الصيدلي محدد بربح ب ١٢٪ فقط وهي عيادات منخفضة التكاليف لكل الخدمات التي تقدمها للمرضى وبأجور مخفظه .

اشواق : please describe how the prices of pharmaceutical decided in this pharmacy بمعنى اخر ؟ كيف يتم تحديد أسعار الادويه في هذا النوع من الصيدليات؟

[redacted]:مقدمه البولي لكنك هي سمي برايفت وليس برايفت تخضع للحكومة وانا عندي تعليق على هذا النوع لان المريض يضيع حقه فيها لان الأطباء في العراق وكردستان ودخلت شركات الادويه التي تركز على الدعايات للمنتجات ... رغم كونها جيده من ناحية النضافه والموقع والبنايات الحديثه والأثاث والتجهيز الحديث لكن فيها استغلال للمريض وأحيانا سؤ ء استخدام للنظام الدوائي

اشواق : انقطع الاتصال وبدا اتصال جديد

اشواق : لماذاانت غير مرتاح لهذه التجربه هل هي افضل للمريض ؟ولماذا؟

[redacted] : في البدايه من تأسيس هذه العيادات كان المريض يدفع فقط ٥٠٪من السعر والباقي الدولة تدفعه أو تسديده للصيدلي اي ٥٠ ٪ من السعر الاجمالي للوصفه والصيدلي ياخذ فقط ١٢ ٪من سعر الشراء والحكومة تدفع ٥٠٪ من سعر الوصفه الخدمات محدودة والربح محدود بينما في الصيدليات الخاصه ٢٥٪_٣٠٪ او اكثر الربح للصيدلي .

االشواق : كونك صيدلي قطاع خاص في البدايه هل كان من اختيارك الخاص ان تتحول الى هذا النوع من الصيدليات ؟ ولماذا؟

انقطع الاتصال ايضا مع المشترك وحاولنا اجراء اتصال اخر !

اشواق : اعتذر لانقطاع والخلل الفني نرجع نكمل

صف لي عملية تسعير الادويه بالعيادات الاستشاريه اللي شبه حكوميه

[redacted] : لازم نميز بين هذه الاستشاريات والاستشاريات الحكوميه او شبه الحكوميه اقصد ، أساسا الصيدلي يجهز الصيدليه بالادويه من المذاخر الأهلية حسب احتياجات الصرف بكل عياده استشارية لانها محدده بالصرف فقط لمراجعي العيّاده الاستشارية فقط في عدهم نضام بدائي كمبيوتري توثق به قوائم الادويه من المذاخر بأسعار الشراء من المذخر تحدد الأرباح منها ١٢٪ للصيدلي وتوثق سعر الوصفه الكلي وليس الجزئي بضربها ب ١٢٪ تضاف والسعر الاجمالي الوصفه يتم تقريبه لأقرب عمله لكل الوصفه وليس لكل ماده .

اشواق : ممكن تذكر النسبه التي تدفعها الدولة من سعر الوصفه الى الصيدلي وهل تلتزم دائماً بالدفع ؟

[redacted] : في الضروف الحاليه لا لان انا كنت ايضا ضد هذه الفكره وفعلا حصلت مشاكل وتم التوقف عن هذا لمنع استغلال المريض والطبيب لهذا السبب فتقريبا الغيت النسبه في بدايه الشهر الثالث في العام الحالي ٢٠١٤ صار المراجع ملزم بالدفع كامل لسعر الوصفه وبقت نسبة أرباح الصيدلي ثابته السبب في إلغائها او توقفها هو إساءة استخدامها من قبل كل من الطبيب والمريض مما أدى الى هدر بالأموال وبنفس الوقت هدر بالادويه لان المريض احيانا يفرض على الطبيب كتابة وصرف بعض الادويه التي قد تكلف الدولة وهو أصلا لا يحتاجها او يتم المتاجرة بيها في السوق السوداء او مكانات اخرى وهذا طبعا بسبب الحاجه المادية احيانا .

اشواق:Can you describe the consultant clinics in Kurdistan ? Explain more for me ?

[redacted] : هي عيادات انشأتها وزارة الصحه في كردستان تختلف عن العيادات الخاصه اما بالنسبة لنا هي شبه خاصه فاجورها مخفظه عموما الطبيب والأشعة والمختبر الطبيب له راتب من الحكومه اضافه الى نسبة ٣٠٠٠ دينار عراقي لكل وصفه اما الصيدلي فليس له راتب من الدولة في هذه العيادات لكن له ربح محدود في سعر الوصفه الاجمالي وهو ١٢ ٪ مسؤوليته هي توفير الادويه المطلوبة لمراجعين العيّاده الاستشاريه وبيعها بأسعار اقل من الأسعار في الصيدليات الخاصه في القطاع الخاص .

اشواق :هل هو اختياري للصيدلي للعمل في هذا المجال ؟

[redacted] : هو اختياري الالتحاق بهكذا صيدليه وكان اختياري انا لان السوق والقطاع الخاص وتعاملاته مليت منه فحبيت أغير أضافه الى انه بيه فائده للناس والمراجع خصوصا .

اشواق : شنو اللي خلاك تمل من السوق وتعاملاته ؟

[redacted] : المهنية قلت من العمل الصيدلاني هذا سبب رئيسي لتركي العمل هناك

اشواقwho benefit and who does not from this pharmaceutical pricing system ?

[redacted] : الدخلاء هم المستفادين الرئيسيين لان معظم الصيادله باعوا إجازاتهم الدخلاء اصحاب رؤوس الأموال والصيدلاني تراجع وصارت المهنه تفتقر للعلميه .

اشواق :ممكن تعرف من هم الدخلاء وماذا تقصد بالدخلاء ؟

[redacted] : الدخيل هو صاحب راس المال الذي يشتري شهادة الصيدلاني ويفتح الصيدليه بها

الصيدلاني غير مستفيد من شهادته ويأخذ راتب محدود وخلص

اشواق : what about the dirty jobb ? Can you explain more about it ?

[redacted]: هي إغراء الأطباء لكتابة الوصفات وترويج المنتجات مثلا بسفرات خارج العراق او هدايا مثل ثلاجة او لأب توب فيتم صرف كثير من المنتجات لهذه الشركات وان كان المراجع لا يحتاجها في الوصفه ولا يوجد شيء يحمي المريض من هذا الشي الذي فيه هدر لصحته وأمواله أكيد

اشواق : وأين الرقابة الدوائيه ونقابة الصيادله ووزارة الصحه ؟

[redacted]:موجوده جميعا لكن ليس لها دور فاعل فالنقابه تنتضر الانتخاب فقط ولا تستطيع اثارة الخلافات برأيي يجب ان توجد جهه عادله ثالثه هي الّتي تحاسب بحياديه لتكون عادله وحازمه في المحاسبة . الدور المطلوب لهذه الجهات غير موجود القانون يحتوي الكثير لكن لا يوجد له تطبيق وتنفيذ في أرض الواقع .القانون في العراق الان يطبق فقط على الضعيف ولا يطبق على القوي .

اشواق : To what extend as a pharmacist do u think the pharmaceutical pricing system could be changed in future ? What is the best method?

[redacted]ggn god: هَذَا يعتمد على وضع البلد ككل لآنني دخلت في برنامج ضمن نضام منضمة الصحه العالمية اسمه govemence of medicin اللي هو برنامج يهتم ويبدأ بالدواء من الصناعة الى القوانين وتقيمه في البلد لكي توافق المواصفات العالمية لكن مع الأسف نحن لم نطبقه في العراق لكن الدول العربيه كلها طبقته بعدها انقطعت لان لم نجد تعاون من البدايه في الاصلاح ... سوء أوضاع البلد وسوء الاداره كلها أسباب لذلك وأي تغير ممكن يحصل لكن ليس بسهوله لانه بعد احداث ١٩٩٠ كلشي تدهور ومنها مجال الصيدله كأي مجال اخر بالبلد تم تدميره تدريجيا للأسف من ١٩٩٠ كلشي بده يسوء اما إصلاحه العمليه ينرادلهه بخت هههههه.ووقت قد أكون متشائم والقانون هو الحاكم وكل القوانين موجوده للتنظيم وهي أساسا قوانين رصينة لكن التنفيذ غير رصين .

اشواق: النضام في الاستشاريات جيد للمريض لكن what about the availability Og pharmaceutical s in this type clinics ? ? Is it similar to t he public sector or better or what ? What do you think ?

[redacted] : يعتمد هذا الشي على الأطباء الاستشاريين العاملين في هذه العيادات وتخصصاتهم وانا كصيدلي ملزم التوفير الادويه التي تدخل بضمن اختصاصات العيّاده التي اعمل فيها اما ان أكون فري منه بالمئة لآني محدد بالعياده فقط وضمن صيدليه محدودة محصور في بنايه مع مراعاة السعر لازم تكون كوست ايفيكتف وتكون مناسبة بالسعر والنوعية بمعنى اخر يكون اللجينيريك اكثر رغم كونه مطلوب احيانا من قبل المريض وخصوصا أن مراجعين هذه العيادات كانوا مستفيدين من النسبه المخفظه بالسعر للوصفه ٥٠٪ ولكن حصلت في بعض المحافظات أسائه لاستخدام هذا النظام و للوصفه وتحريرها فيكون عبيء للوزاره بغياب وانا كنت من المعارضين لنضام دعم الوصفه لخمسين بالمئة لانها تفتح باب لاسائة الاستخدام لتحرير الوصفات من reassures قبل بعض الأطباء او بيع العلاج من قبل بعض المراجعين المزيفين وانا أوفر الدواء الذي يكون مجاز من وزارة الصحه وأمين ومسجل مع مراعاة السعر .فقد كتبت للسيد الوزيرشخصيا حول موضوع إلغائها لانه ومن خلال تجربتنا وجدنا ان فيها ضرر لكل العمليه مما يشكل عبيء .فمثلا انا اطلب الحكومه اقصد وزارة الصحه ٢٠ الف دولار لم يتم تسديدها لي لحد الان وهذه واحده من المشاكل ومتعلقات هذا النضام والنسبه التي تم تحديدها والمراجع يدفع ٥٠٪ والصيدلي الدولة تدفع له ٥٠ ٪ من سعر شراء الدواء مما قد يؤدي إرباك لي انا كصيدلي وضرر مادي .

اشواق : بالنسبة للعقود التي تم إبرامها بينكم وبين وزارة الصحه او إدارة هذه العيادات ، ما هو مدى دقة تنفيذ هذه العقود والتزام الطرف الاخر بيها (وزارة الصحه)؟هل انت ضامن ؟ هل انت محمي لحماية حقك ؟

[redacted]: لا والله حاليا ماضامن خصوصا بعد الضروف الحاليه . في البدايه كان كل شهر نستلم نقودنا لكن الان الوضع اختلف . المستحقات كان شهريا نأخذه لكن نضام بنكي غير موجود في هذه العيادات لكن في محايدين وتوثيق وتقرير شهري وتدقيق بالحسابات وتخضع للتدقيق وعليه يصير الدفع .

اشواق : المشترك لم يكن لديه وقت لقرائه الملف المرفق عن الدول الاسكندنافيه

في دول الشمال وحاولت أوضح باختصار معنى النظام التعويضي reimbursmentأعطيته نبذه مختصره عن نضام ال reimbursment . وتبين لي انه لديه اطلاع مسبق عن بعض الأنظمة في بعض الدول الأوربية مشابه نوعا ما وسألته

اشواق:could some elements of it be usefully for iraq?

[redacted]:اعتقد انه في الدول المستقرة هو الأفضل لانه لا يحصل فيها سوء استخدام لكن وضعنا بالعراق يختلف لانها قرارات سيادية نحن كان قد اقترحنا هذا النضام والوزاره وافقت عليه لكن صار سوء استخدام لهذا النضام

dession maker must be able to learn from other countriesالاستقرار في النضام وقوانين

reimbursmentاشواق : العراق بلد فيه المواطن مستهلك لايوجد دعم لميزانية الادويه وأكيد نضام تركيا كان شيء والآن هو وتم عرضه على الجهات المسؤله لتطبيقه هنا لكن لم تكن استجابه الوضع السياسي والسياسه العامه ما تساعد لحصول تغير الا في حال حصول تغير جذري البيت اللي يصير بيه هكذا نوع من المرض العائله كلها تتدمر

how do u think different actors would react to this idea ?اشواق:

بعض الأطباء invisible in com[redacted]: أكيد يكون في صالح المريض مثلا الطبيب راح يخسر دخل غير مرئي مع الأسف يفضل مصلحته على مصلحة مريضه يحتاج ان يكون هناك نضام يضبط التطبيق ومن أمن العقاب أساء الأدب وانا لا أقول الكل هيجي سيئين الكل لازم يلتزم في هذا الحال صعب لان حاليا الضروف كله تغيرت النفسيات ايضا تغيرت اما الصيدلي العراقي لايؤمن بالنضام المصرفي البنكي يعني الصيدلي ما يثق بالبنك هنا هسه كل واحد يريد نقوده عنده في بيته لان البنوك في العراق تنقصها الثقه بين النضام المصرفي العراقي هي صفر كثير من الناس نقودها كانت بالمصارف فجأه ضاع كل شئ وكل شي راح بسبب ان المصارف كانت بيد السلطة الحاكمه وتم سرقة الأموال. ف الصيدلي سوف تكون عنده مشكلة التعامل المصرفي والتسديد من قبل الدولة. وبكلمات اخرى ان هناك مشكلة ثقه كبيره بين البنوك والفرد واعني الصيدلي وكذلك الوضع السياسي الغير مستقر للدولة حاليا

what about the reaction of the patient ?اشواق :

[redacted]في كردستان المراجع متعود ياخذ ادويته مجانيه في القطاع العام وبعد ذلك في القطاع الخاص وكذلك شبه الخاص المراجع بالعكس يستفاد لذلك الان الإقبال كثير على هذه العيادات الاستشاريه وخصوصا من كانت خمسين بالمئة لكن في من أساء استخدام هذا النضام فتم إلغائها بالعكس المريض راح تخدمه ويرتاح اكثر اذا لم يسيء لاستخدام وفي حال وجود تحديد لقوانين

اشواق : هل حصل التوقف عن دفع خمسين بالمئة من سعر الوصفه بعد ام قبل االازمه الحاليه بالعراق ؟

[redacted] : حصل قبل االازمه خصوصا بعد ان توقف الحكومه ألمركزيه من دفع المستحقات المالية لكردستان اقصد الميزانية مما أدى ايضا الى تقصير في دفع المستحقات للعيادات الاستشاريه وغيرها

ما ضلت مصادر وحصل عجز بالميزانية

what about the crisis effect Omn medications in Kurdistan according to moh in Kurdistan to WHO ?اشواق :

او ينفقد shortage[redacted] : النقص اكثر شي صار في القطاع العام الذي هو أساسا موجود قبلها بسبب كيماديا الأكثرية يصير بسبب انه بعض الدول لا تسمح بدخول الادويه لمنطقة العراق مثلا المخدرات من يصير قصور المريض يعاني ومن نحصلهه تكون under need همهمله الادويه السرطاني لكن الإنسولين السنه وضعه جيد في كردستان لكن . وكذلك ادوية المزمنه والسرطانيه وخصوصا الأشياء ألمساعده لمريض السرطان لكن من جه اخرى تكديس مواد اخرى مثل vital items big shortage resistance المضادات الحيويه بشكل عالي مما يؤدي الى زيادة availability في دهوك صار الضغط اكثر مما اثر على حاليا . ل ٩٠٪ وكلهم محتاجين ادويه وحالتهم population بسبب اللاجئين الذين زاد عددهم بالفتره الاخيره مما سبب زياده في ال تعيسه مما اثر على كمية الادويه في المحافظة بشكل عام .

any think more u want to add ?اشواق :

كثير من shortageميرخان : نحن نستلم منح ومساعدات من منضمات عالميه مختلفه لكن ليس بالكميه التي تغطي كل organizedالمنضمات بدو يكونون اكثر ويأخذون بآراء المؤسسات واحتياجه

thanks a lotاشواق :

Sendt fra min iPad

At the beginning of the interview I tried to mention some points of common despite the weak internet and sound, but the recording started and the interview by mention these points:

1. The interview will be muffled

2. Brief introduction of explained search and rename it and pharmaceutical pricing system in Scandinavia

3. Illustrate that the corresponding language choice language Arabic-English-Norwegian

4-dialogue will be free

5-It could be a technical fault happened, so we can just retry the connection!

The participant was busy and he answered the telephone, because he was in his office .He is the Manager of the Pharmacy Department in the Ministry of health in Kurdistan

AS: Can you introduce yourself please?

K : I am pharmacist K, Director of Department of pharmacy in […] and health department I worked in WHO(in the past but not now).I own my pharmacy and I manage the process within the Advisory clinic(consultation clinics in Kurdistan).Before that I had my own community pharmacy in private sector, then ,I turned to consulting clinics in which there is a limited margins and prices .There's a limitation for the pharmacist margins in not more than 12% only .In addition to that this type clinics give low cost for all services (such as laboratory or x-ray services) provided to patients and the patients pay low wages for the services.

AS: Please, describe how the prices of pharmaceutical decided in this type pharmacy in these clinics? In other words, how is the price of medicines in this type of pharmacies decided?

K: At the beginning I will give an introduction about this type clinics in Kurdistan ,I called it a semiprivate clinics but not completely private because its managed and financed by the Government .I have reviews on this type pharmaceutical pricing

system because the patients misuse that doctors in this clinics to get medications. Both in Iraq and Kurdistan ,the existence of the pharmaceutical companies which have focusing on advertisements for products ... Despite of they are good clinics in services ,good locations and modern buildings, furniture and equipment's, but exploitation of the patients due to the misuse of the medical system

AS: Disconnected and started a new connection!

AS: But why you feel uncomfortable toward this system (50% reimbursement for the prescription price) ?Is the experience best for the patients? And why?

K: At the beginning, the clinic's patients must only pay 50% of prescription price and the rest of prescription cost will the government pay. The process occur by repaid to the pharmacist 50% of the total price for the prescription and the pharmacist takes only 12%margin of purchase price and the Government pays 50% of the price of prescription services are limited to the patients of clinics only with limitation in prices and margins while in private pharmacies, there are about 25% _ 30% or more margins to the pharmacist.

AS: As a pharmacist in private sector at the beginning of your life and your pharmaceutical work, was the choice to turn into this kind of pharmacy optional? And why?

AS: Contact was lost again and I tried to make another connection!

AS: I apologize for the interruption and technical bugs, and I will go continue to my questions about the pharmaceutical pricing system in this type pharmacy, please describe, how the pricing process managed by government in this semi private clinics (consultation clinics)?

K: Its necessary to distinguish between these clinics which are a semi-governmental (semi private) and the other clinics which are full governmental (public), basically the pharmacist equipped the pharmaceuticals which are essential in this clinics by the private wholesales according to the need of this clinics which depend on the type of the consultation for different physicians, in addition to the limitation of the patients of clinics only. The clinic have a primitive computer system documenting and the registration of the prescriptions happened daily, the drug lists of purchase prices of

the wholesale and adding 12% to the wholesale purchase price of the total price of prescription as a limited margin to the pharmacist in this pharmacy ,some time we must take the nearest to the rounded price in the Iraqi market; example if the total price of a prescription to one patient is 150 ID ,so the patient will pay 250 ID(the lowest value (bank)note is 250 ID),because 150 ID have no value in Iraqi market and so on.

AS: Describe the reimbursed percentage which pays by the government to the pharmacist? Do they pay always at the right time?

K: In the current circumstances because I was also against the idea and really got problems and stop this to prevent exploitation of the patients and the doctor for this reason virtually abolished in Mars 2014.After this date , the patients must pay full price for prescription but pharmacist margins are still the same (12% only). The reason to stop this type reimbursement was the abuse by both doctors and patients, resulting in wasted money and wasted medicines because the patient sometimes forces the doctor to write some pharmaceuticals that may cost the government (Ministry of health) but its originally not needed or omitted or some people is traded on the black market or other places and this of course, because of need and poorness.

AS: Can you describe the consultant clinics in Kurdistan? Explain more for me?

K: They are clinics established by the Ministry of health in Kurdistan, and they differ from private clinics. For us are semi-private, wages generally are low. Their staffs are physicians, radiologist and laboratory. Doctors get salaries from the Government in addition to 3,000 ID (Iraqi Dinar) for each prescription .The pharmacist get no salary from the State in these clinics but has won limited in the total recipe and fixed rate is 12%.The pharmacist responsibility is the provision of medicines required for advisory clinic (consultation clinics) and patients sold at lower prices than prices in private pharmacies in the private sector.

AS: Is that an optional to the pharmacist for work in this area?

K: It is an optional job to work in this type of pharmacy , I was completely my choice to change my job to this type clinic because of that I was boring from the private

pharmaceutical market and at the same time ,because I think that this type clinics have benefit to help people (poor people).

AS: Why are you so tiered (boring) of pharmaceuticals marketing in private pharmacies?

K: The most important reason to that for me was absence of the professional identity and work to the community pharmacy in Iraq now. (He said that with painfully clear words).

AS: who does benefit and who does not benefit from pharmaceutical pricing system now?

K: I think the intruders have the most benefit of this non organised pricing system in Iraq. Many pharmacists have sold their profession license to the intruder's capitalists and pharmaceutical review and became a profession lacks scientific view.

AS: What do you mean by intruders? Can you define "intruders "/Explain, please?

K: The intruder is the owner of the capital who buys the pharmacist profession and the pharmaceuticals and non-pharmaceutical and has complete capital to finance the community pharmacy .The pharmacist role in the community pharmacy as an employer with a limited salary per month.

AS: The dirty job? Can you explain more about it?

K: Most of the pharmaceuticals companies try to lure the doctors to write prescriptions, product promotion, by giving them for example, travels outside Iraq or gifts such as a refrigerator or laptops. The doctors help to sale many of products of these companies and even if the patient was not required on recipe and nothing protect the patient from these thing that was a waste of their money and uncertain treatment.

AS: Where are pharmaceutical control, pharmaceutical association and the Ministry of health?

K: All are founded but they don't have an active role, the pharmacy syndicate is waiting for the election only and will not make problems and conflict . In my opinion, there must be a fair third-party is held in neutral to be fair and firm in accounting. The

role required for the non-existent law contains a lot but has no application and implementation on the ground. The law in Iraq now applies only to the weak and not strong persons.

AS: To what extend as a pharmacist do you think the pharmaceutical pricing system could be changed in future? What is the best method?

K: This depends on the development of the country and its political situations as a whole. In the near past ,I worked with WHO as a part of an international pharmaceutical program to develop the pharmaceutical system generally in Iraq .Program name is GGM (Good Governance of Medicine) because It was interested to me and its consider the medication from the industry to the country's laws and to approve international standards but unfortunately we could not use it in Iraq because of the corruption, but its then applied successfully by the other neighbouring Arabic states. After that I cut off with this because we found no cooperation from the governments in addition to the poor conditions in the country and poor management are all reasons for this .Any change possible but not easily to get it. Especially after the events of 1990's deterioration, including pharmacy as any other area of the country destroyed and the process of repairing need time and luck (I think. Said that laughing). I'm may be pessimistic about that but the ruling law and all laws exist and are basically solid laws but implementation is not sober.

AS: What about the pharmaceutical availability on this type of clinics ? Is it similar to the public sector or better or what? What do you think?

K: this thing depends on consultant physicians working in these clinics, specialty and I (as a pharmacist) is obliged to save drugs that fall within the competence of the clinic where I don't used to have every think in my pharmacy because my pharmacy users are restricted only within the clinic , with taking in consideration suitable price, its necessary to be coast effective price and be suitable for price and quality, in other words be more suitable to the patients of clinic ability have mostly the generics but sometimes the original drug is required by the patients at this time I can order it for him .In addition to the low cost of services specially when it was 50% of the whole prescription price only must paid , but in some provinces in Kurdistan ,there was a misuse for this system and the recipe editing is mobilized because of the absence of reassures and the good control system. I was opponent to assert supports recipe to

50% because it opens for the abuse to edit recipes by some doctors or by selling treatment by some patients/or the clinic users and the fake recipes of the fake patients. As a pharmacist in this clinic ,I'm oblige to buy just the pharmaceuticals which are approved by the Ministry of health and have register control documents taking in consideration the price and its affordability to the users of this clinic. I had written to Minister of health in Kurdistan for the cancellation of this type support (50%) and the patients pay now 100% of the total price. From our experience we have found that the damage to the whole process is mobilized. In addition to that ,this system was difficult to me as a private pharmacist and made many economics problems to me because of the payment of the recipe cost (50% from patient and 50% from the State «ministry of Health). For example, the government «the Ministry of health "have not paid to me more than 20,000 USA dollars til now from mars , so this type problems can cause confusion for me as a pharmacist and economic damage damage.

AS: About the contracts concluded between you and the Ministry of health or the management of these clinics. What about the accuracy of these contracts and the obligation of the other party omitted (MOH)? Are you a guarantor? Are you protected to protect your rights?

K:I have no guaranty and no complete protection, specially after the current circumstances and Iraq crisis. Initially, each month we receive our money but now the situation differed. Receivables was a month we take but the banking system is not in these clinics but the clinics have employers who have the responsibility for the documentation process and reporting monthly and checking accounts and the dispensing process in the pharmacy to make it more the process more payable.

AS: the informant did not have time to read the attached file about the Nordic countries gave brief assert the reimbursement in Nordic tried to explained briefly the meaning of reimbursement system . And I found out that he had informed in advance about some systems in some European countries somewhat and I asked him this question:

AS: What do you think as a pharmacist ,could some elements of Nordic reimbursement system be useful for Iraq?

K: I think it is best for stable countries which have technical control to avoid system abuse. But we have Iraq!, and its is different because we were sovereign decisions. We suggested and proposed a similar to this system and the Ministry approved in this clinics but the misuse of this system stopped it. The stability in orders and laws can help the decision maker to learn from other countries experiment ,but now is difficult because of the political situation. I think Iraq now is a consumer country who does not have support for the budget and certainly assert for its economy .We tried to take or try the Turkey reimbursement system and asked to applying it here but not response. Political status and policy help to change unless radical change “House which have this problem ,so the whole family be destroyed”

AS: how do you think different actors would react to this idea?

K:I’m sure ,it will be good and interested for the patients, but not for the doctors(physicians)because of that they will lose a type of nonvisible income but not all doctors 8most of them. Some doctors prefer to get complet benefit of the patient.

We need first a good and strong system to regulate the application of such type system. I’m not saying that all are bad ,but now ,every think is difficult and the personality is changed and many circumstances can affect the process of application of any new system in Iraq. While the Iraqi pharmacist dosnt believe in the Iraqi banks and there is a confidence problem between them because of the instability of the governments ,every pharmacist now will have his money in his owen pocketmoney home not in the bank, because of that banks in Iraq lacked confidence between the Iraqi banking system and people. Many people put their money in the banks suddenly lost everything and everything was because of the political situation was bad , however, the ruling authority and has been stealing money. The pharmacist will have the problem of banking and payment by the State. In other words, there is a problem of trust between banks and individual and I mean pharmacist as well as the political situation instability.

AS: What about the reaction of the patient?

K:In Kurdistan ,patients used to take his medication free of charge in the public sector, full of charge in private sector and as well as in semi-private pharmacy , patients versa paid 50% of charge at the beginning and it was good experiment for

him and it was acceptable and comfortable idea for him ,but the abuse terminate this experiment .So ,I think if we can have good control sytem to regulate this process ,it will be perfect to Iraqi patients specially the poor one who need expensive medications.

AS: When the system had stopped paying with 50% of the price of the prescription? Was that after or before the current crisis in Iraq?

K:It stopped before the crisis, especially after the Central Government stopped paying dues to Kurdistan. I mean the budget and that also led to default in payment for consulting clinics and other primary sources of public and semiprivate clinics and this affect directly on the health care system budget also.

AS: what about the crisis effect on medications in Kurdistan according to ministry of health in Kurdistan to WHO?

K: The shortage of pharmaceuticals mostly became in the public sector institutions which is basically exist before the crisis, because they depend in majority on KIMADIA ( ) .The shortage happened because some States do not allow the entry of medicines to Iraq, for example analgesic drugs, the drug area becomes insufficient for patients and when we get it, so they were under the country need. As well as chronic and cancer drugs but in this year it was a good availability of insulin in Kurdistan but the cancer drugs were neglected and under need and some items become weary for cancer patent specially the vital items and big shortage in things which help cancer patient. On the other hand the accumulation of other materials such as antibiotics which is couse increasing in resistance. After crisis in the pressure became too much impact on availability of medications because of the dramatically increase in the number of of refugees .This immigration process led to increase in 90% of the population in my city and this led to similar increase in the pharmaceutical need in this area. The most of refugees need vital medication and they are in bad condition. All that were strongly affect the availability of medication generally in all Kurdistan area.

AS: Any thin more you want to add about this?

K: We receive grants from various global organizations but not in the quantity that covers every shortage. Many organizations appear to be more organized and take the views of the institutions and the real need.

AS: Thanks a lot

Appendix 5. PDF /documents to the diabetes data

The available medicines in diabetes treatment in iraq and Norway

Insulin analogues for injection, fast acting, rniddle, combination/ blood glucose lowering medicines/another medicines used in diabetes treatment/aldose reduction inhibitors			Produced by	form	Package volume	Pharmaceutical prices in retail chain (purchase and reimbursement/insurance prices)			The availability/ year/unit as example	Max delivery amount/ person/ purchase or time period (1)
Active constituent	Branded name	Bio similar/ Generic name				Wholesale price ($)	Pharmacy retail price ($)	Patient payment/co-payment/$/ 100% reimbursed (2)		
30% solube insulin 70% isophane insulin	mixtard® 30	mixtard® 30 insuman® comb	Novo nordisk (denmark) Sanofi aventis	Vial vial	10 ml	2.3$	* not available in private pharmacies	Free dispensed from DM center in the hospital	17200/ year *this is for year 2013	* in hospital 15vial/ 3 month * in public medical clinics 6 vial/muonth
Insulin isophane	Insulatard®	Insulatard®	Novo nordisk	vial	10ml	2.5$	* not available in private pharmacies	Free dispensed from DM center in the hospital	13500/ year *this is for year 2013	* in hospital 12 vial/ 3 month * in public medical clinics 6 vial/month
Insulin human (r DNA)	actrapid®	actrapid®	Novo nordisk	vial	10ml	2.5$	* not available in private pharmacies	Free dispensed from DM center in the hospital	13000/ year *this is for year 2013	* in hospital 12 vial/ 3 month * in public medical clinics 6 vial/month

Insulin aspart	novorapid® flex pen®	novorapid® flex pen®	Novo nordisk (denmark)	Prefilled pen 3ml (100 U/ml)	5×3ml	14.10$	17.5$	Free dispensed from DM center in the hospital	7800 pen / year	*8 pen / 3mounths * this max delivery amount maybe less than 8pen / 3mounths according to patient's response
Insulin glargin	Lantus solostar®	Lantus solostar®	Sanofi aventis deutchland GMBH	Prefilled pen 3ml (100 U/ml)	5×3ml	20.32$	24$	Free dispensed from DM center in the hospital		*14 pen / 3mounths * this max delivery amount maybe less than 14 pen / 3mounths according to patient's response
Insulin aspart 30% and insulin aspart crystallized with protamine 70%	Novomix ® flex pen®	Novomix ® flex pen®	Novo nordisk (denmark)	Prefilled pen 3ml (100 U/ml)	5×3ml	11.60$	15$	Free dispensed from DM center in the hospital	19200 pen / year	*14 pen / 3mounths * this max delivery amount maybe less than 14 pen / 3mounths according to patient's response

]
The available medicines in diabetes treatment in iraq and Norway

Metformin Hcl 500mg.	Glucophage		Merk serono *there are many companies produce the same drug in different prices	Tab.	56 tab	7.5$	10$	Free dispensed from DM center in the hospital	410000/year *this is for year 2013	Dose is dertemint according patients is response
Metformin Hcl 850mg.	Glucophage		Merk serono *there are many companies produce the same drug in different prices	Tab.	56 tab.	8.5$	11.5$	Free dispensed from DM center in the hospital	150000/year *this is for year 2013	
Metformin Hcl 1000mg.	Glucophage		Merk serono *there are many companies produce the same drug in different prices	Tab.	30 tab.	6.5$	8$		available in privet pharmacies	

Glimepiride 1mg	Amaryl		Sanofi avantis	Tab	30 tab.	8$	10$		available in private pharmacies	15 tab/ 15 day
Glimepiride 1mg	Amaryl		Sanofi avantis (turkey)	Tab	30 tab.	4.2$	6$		available in private pharmacies	15 tab/ 15 day
Glimepiride 2mg	Amaryl		Sanofi avantis	Tab	30 tab.	13$	15$		available in private pharmacies	15 tab/ 15 day
Glimepiride 2mg	Amaryl		Sanofi avantis (turkey)	Tab	30 tab.	4.2$	6$		available in privet pharmacies	15 tab/ 15 day
Glimepiride 4mg	Amaryl		Sanofi avantis	Tab	30 tab.	23$	26.5$	Free dispensed from DM center in the hospital	This drug is newly introduced to the hospital & it's already available in privet pharmacies	15 tab/ 15 day
Glimepiride 4mg	Amaryl		Sanofi avantis (turkey)	Tab	30 tab.	4.5$	7$		available in privet pharmacies	15 tab/ 15 day
Glimepiride 3mg	Glimephan3		Mepha Aesch-basel, switzerland	tab	30 tab.	11.5$	13.5$	Free dispensed from DM center in the hospital	This drug is newly introduced to the hospital & it's already	15 tab/ 15 day

									available in privet pharmacies	
Glimepiride 3mg	Amaryl		Sanofi avantis	tab	30 tab.	18.5$	21.5$		available in privet pharmacies	15 tab/ 15 day
Glimepiride 3mg	Amaryl		Sanofi avantis (turkey)	tab	30 tab.	4.3$	6$	Free dispensed from DM center in the hospital	available in privet pharmacies	15 tab/ 15 day
Glimepiride 6mg				Tab					Neither available in hospitals nor privet pharmacies	15 tab/ 15 day
Sitagliptin phosphate 100mg	januvia®	januvia®	Merck sharp & dohm (Italia)	Tab.	30 tab.	38.5$	45$	Not available in the hospital		
Glibenclamide 5mg	Daonil	Daonil	Sanofi avantis *there are many companies produce the same drug in deferent prices	Tab.	100 tab.	14$	16$	Free dispensed from DM center in the hospital		Dose is dertemint according patients is response

Glibenclamide 5mg			cyprus *there are many companies produce the same drug in deferent prices like DAONEER by pioneer co.-iraq	Tab.	100 tab. 20 tab.	5.3$ 1.5$	6.1$ 2$	Free dispensed from DM center in the hospital		Dose is dertemint according patients is response
aldose reduction inhibitors									Not available in diwaniya city	

The available medicines in diabetes treatment in iraq and Norway

Insulin pump type	Produced by	Availability for pationts	Other notes
Not available in Iraq			

The available medicines in diabetes treatment in iraq and Norway

Mention the available devices and its consumables for blood glucose measurement and describes the delivery method for users.
- the most common device used for blood glucose measurement is Accu-CHEK® (Roche company). - Used in hospital & home for measurement and monitoring blood glucose. - Its price is 23$ - Kit price is 11$ that has 50 strips. - Available in drug stores ,Pharmacies ,Stores of medical appliances. - Some times this device and its kits are dispensed freely in not regular periods every year in the hospital DM center so the diabetic patients depend mostly up on buying it from the private sector

Appendix 6. NSD approval appliance document

Norsk samfunnsvitenskapelig datatjeneste AS
NORWEGIAN SOCIAL SCIENCE DATA SERVICES

Harald Hårfagres gate 29
N-5007 Bergen
Norway
Tel: +47-55 58 21 17
Fax: +47-55 58 96 50
nsd@nsd.uib.no
www.nsd.uib.no
Org.nr. 985 321 884

Ingunn Björnsdottir
Farmasøytisk institutt Universitetet i Oslo
Postboks 1068 Blindern
0316 OSLO

Vår dato: 22.04.2014 Vår ref: 38436 / 3 / JSL Deres dato: Deres ref:

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 04.04.2014. Meldingen gjelder prosjektet:

38436	*Feasibility of the Nordic pricing and reimbursement system for Iraq - Norway as a case*
Behandlingsansvarlig	*Universitetet i Oslo, ved institusjonens øverste leder*
Daglig ansvarlig	*Ingunn Björnsdottir*
Student	*Ashwak K. Hamza*

Personvernombudet har vurdert prosjektet og finner at behandlingen av personopplysninger er meldepliktig i henhold til personopplysningsloven § 31. Behandlingen tilfredsstiller kravene i personopplysningsloven.

Personvernombudets vurdering forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, ombudets kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, http://www.nsd.uib.no/personvern/meldeplikt/skjema.html. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, http://pvo.nsd.no/prosjekt.

Personvernombudet vil ved prosjektets avslutning, 31.01.2015, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Katrine Utaaker Segadal

Juni Skjold Lexau

Kontaktperson: Juni Skjold Lexau tlf: 55 58 36 01
Vedlegg: Prosjektvurdering

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

Avdelingskontorer / *District Offices*:
OSLO: NSD. Universitetet i Oslo, Postboks 1055 Blindern, 0316 Oslo. Tel: +47-22 85 52 11. nsd@uio.no
TRONDHEIM: NSD. Norges teknisk-naturvitenskapelige universitet, 7491 Trondheim. Tel: +47-73 59 19 07. kyrre.svarva@svt.ntnu.no
TROMSØ: NSD. SVF, Universitetet i Tromsø, 9037 Tromsø. Tel: +47-77 64 43 36. nsdmaa@sv.uit.no

Kopi: Ashwak K. Hamza hamza.ashwak@hotmail.com

Norsk samfunnsvitenskapelig datatjeneste AS
NORWEGIAN SOCIAL SCIENCE DATA SERVICES

MELDESKJEMA

Meldeskjema (versjon 1.4) for forsknings- og studentprosjekt som medfører meldeplikt eller konsesjonsplikt (jf. personopplysningsloven og helseregisterloven med forskrifter).

1. Prosjekttittel		
Tittel	Feasibility of the Nordic pricing and reimbursement system for Iraq - Norway as a case	
2. Behandlingsansvarlig institusjon		
Institusjon	Universitetet i Oslo	Velg den institusjonen du er tilknyttet. Alle nivå må oppgis. Ved studentprosjekt er det studentens tilknytning som er avgjørende. Dersom institusjonen ikke finnes på listen, vennligst ta kontakt med personvernombudet.
Avdeling/Fakultet	Det matematisk-naturvitenskapelige fakultet	
Institutt	Farmasøytisk institutt	
3. Daglig ansvarlig (forsker, veileder, stipendiat)		
Fornavn	Ingunn	Før opp navnet på den som har det daglige ansvaret for prosjektet.Veileder er vanligvis daglig ansvarlig ved studentprosjekt. Veileder og student må være tilknyttet samme institusjon. Dersom studenten har ekstern veileder, kan biveileder eller fagansvarlig ved studiestedet stå som daglig ansvarlig.Arbeidssted må være tilknyttet behandlingsansvarlig institusjon, f.eks. underavdeling, institutt etc. NB! Det er viktig at du oppgir en e-postadresse som brukes aktivt. Vennligst gi oss beskjed dersom den endres.
Etternavn	Bjornsdottir	
Akademisk grad	Doktorgrad	
Stilling	førsteamanuensis -farmasi	
Arbeidssted	uio- farmasøytisk institut	
Adresse (arb.sted)	FarmasibygningenSem Sælands vei 3	
Postnr/sted (arb.sted)	0371 Oslo	
Telefon/mobil (arb.sted)	22856650 /	
E-post	ingunn.bjornsdottir@farmasi.uio.no	
4. Student (master, bachelor)		
Studentprosjekt	Ja ● Nei ○	NB! Det er viktig at du oppgir en e-postadresse som brukes aktivt. Vennligst gi oss beskjed dersom den endres.
Fornavn	Ashwak K.	
Etternavn	Hamza	
Akademisk grad	Høyere grad	
Privatadresse	Vesselbakkvegen 3	
Postnr/sted (privatadresse)	2380 Brumunddal	
Telefon/mobil	45038251 /	
E-post	hamza.ashwak@hotmail.com	
5. Formålet med prosjektet		
Formål	Formålet er å studere refusjonssystemer og regulering av legemiddelpriser i Norden (Norge, Sverige, Island, Finland og Danmark) og i Irak med sikte på å utforske eventuell nytte av nordisk prising og refusjon modell for legemidler i Irak. Forskerne håper at både irakiske og Nordisk samfunnet vil ha nytte av studiens resultater i fremtiden, spesielt pasienter i Irak som har behov for kostbare medisiner for behandling for kroniske sykdommer. Ut av de nordiske landene blir Norge valgt som modell, og blir derfor mere detaljert analysert end de øvrige nordiske lande.	Redegjør kort for prosjektets formål, problemstilling, forskningsspørsmål e.l. Maks 750 tegn.
6. Prosjektomfang		
Velg omfang	● Enkel institusjon ○ Nasjonalt samarbeidsprosjekt ○ Internasjonalt samarbeidsprosjekt	Med samarbeidsprosjekt menes prosjekt som gjennomføres av flere institusjoner samtidig, som

Oppgi øvrige institusjoner		har samme formål og hvor personopplysninger utveksles.
Oppgi hvordan samarbeidet foregår		
7. Utvalgsbeskrivelse		
Utvalget	Farmasøyter i Irak og farmasøyter som har erfaring både fra Norge og Irak samt profesjonelle informanter innen legemiddelfeltet i Norge og Irak	Med utvalg menes dem som deltar i undersøkelsen eller dem det innhentes opplysninger om. F.eks. et representativt utvalg av befolkningen, skoleelever med lese- og skrivevansker, pasienter, innsatte.
Rekruttering og trekking	Informanter blir funnet ved hjelp av eget nettverk i Irak og ved hjelp av eget nettverk samt veilederes i Norge.	Beskriv hvordan utvalget trekkes eller rekrutteres og oppgi hvem som foretar den. Et utvalg kan trekkes fra registre som f.eks. Folkeregisteret, SSB-registre, pasientregistre, eller det kan rekrutteres gjennom f.eks. en bedrift, skole, idrettsmiljø, eget nettverk.
Førstegangskontakt	pr. e-mail	Beskriv hvordan førstegangskontakten opprettes og oppgi hvem som foretar den. Les mer om dette på våre temasider.
Alder på utvalget	□ Barn (0-15 år) □ Ungdom (16-17 år) ■ Voksne (over 18 år)	
Antall personer som inngår i utvalget	omtrent 16 personer	
Inkluderes det myndige personer med redusert eller manglende samtykkekompetanse?	Ja ○ Nei ●	Begrunn hvorfor det er nødvendig å inkludere myndige personer med redusert eller manglende samtykkekompetanse. Les mer om Pasienter, brukere og personer med redusert eller manglende samtykkekompetanse
Hvis ja, begrunn		
8. Metode for innsamling av personopplysninger		
Kryss av for hvilke datainnsamlingsmetoder og datakilder som vil benyttes	□ Spørreskjema ■ Personlig intervju □ Gruppeintervju □ Observasjon □ Psykologiske/pedagogiske tester □ Medisinske undersøkelser/tester □ Journaldata □ Registerdata ■ Annen innsamlingsmetode	Personopplysninger kan innhentes direkte fra den registrerte f.eks. gjennom spørreskjema, intervju, tester, og/eller ulike journaler (f.eks. elevmapper, NAV, PPT, sykehus) og/eller registre (f.eks. Statistisk sentralbyrå, sentrale helseregistre).
Annen innsamlingsmetode, oppgi hvilken	e-mails	
Kommentar		
9. Datamaterialets innhold		
Redegjør for hvilke opplysninger som samles inn	se vedlagt temaguide	Spørreskjema, intervju-/temaguide, observasjonsbeskrivelse m.m. sendes inn sammen med meldeskjemaet. NB! Vedleggene lastes opp til sist i meldeskjema, se punkt 16 Vedlegg.
Samles det inn direkte personidentifiserende opplysninger?	Ja ○ Nei ●	Dersom det krysses av for ja her, se nærmere under punkt 11 Informasjonssikkerhet. Les mer om hva personopplysninger er NB! Selv om opplysningene er anonymiserte i oppgave/rapport, må det krysses av dersom direkte og/eller indirekte personidentifiserende opplysninger innhentes/registreres i forbindelse med prosjektet.
Hvis ja, hvilke?	□ 11-sifret fødselsnummer □ Navn, fødselsdato, adresse, e-postadresse og/eller telefonnummer	
Spesifiser hvilke		

Samles det inn indirekte personidentifiserende opplysninger?	Ja ● Nei ○	En person vil være indirekte identifiserbar dersom det er mulig å identifisere vedkommende gjennom bakgrunnsopplysninger som for eksempel bostedskommune eller arbeidsplass/skole kombinert med opplysninger som alder, kjønn, yrke, diagnose, etc. Kryss også av dersom ip-adresse registreres.
Hvis ja, hvilke?	Det kan hende at informantene forteller noe personidentifiserbart, men den slags informasjon blir anonymisert i transkriberingen	
Samles det inn sensitive personopplysninger?	Ja ○ Nei ●	
Hvis ja, hvilke?	□ Rasemessig eller etnisk bakgrunn, eller politisk, filosofisk eller religiøs oppfatning □ At en person har vært mistenkt, siktet, tiltalt eller dømt for en straffbar handling □ Helseforhold □ Seksuelle forhold □ Medlemskap i fagforeninger	
Samles det inn opplysninger om tredjeperson?	Ja ○ Nei ●	Med opplysninger om tredjeperson menes opplysninger som kan spores tilbake til personer som ikke inngår i utvalget. Eksempler på tredjeperson er kollega, elev, klient, familiemedlem.
Hvis ja, hvem er tredjeperson og hvilke opplysninger registreres?		
Hvordan informeres tredjeperson om behandlingen?	□ Skriftlig □ Muntlig □ Informeres ikke	
Informeres ikke, begrunn		
10. Informasjon og samtykke		
Oppgi hvordan utvalget informeres	■ Skriftlig ■ Muntlig □ Informeres ikke	Vennligst send inn informasjonsskrivet eller mal for muntlig informasjon sammen med meldeskjema. NB! Vedlegg lastes opp til sist i meldeskjemaet, se punkt 16 Vedlegg. Dersom utvalget ikke skal informeres om behandlingen av personopplysninger må det begrunnes. Last ned vår veiledende mal til informasjonsskriv
Begrunn		
Oppgi hvordan samtykke fra utvalget innhentes	■ Skriftlig □ Muntlig □ Innhentes ikke	Dersom det innhentes skriftlig samtykke anbefales det at samtykkeerklæringen utformes som en svarslipp eller på eget ark. Dersom det ikke skal innhentes samtykke, må det begrunnes.
Innhentes ikke, begrunn		
11. Informasjonssikkerhet		
Direkte personidentifiserende opplysninger erstattes med et referansenummer som viser til en atskilt navneliste (koblingsnøkkel)	Ja ○ Nei ●	Har du krysset av for ja under punkt 9 Datamaterialets innhold må det merkes av for hvordan direkte personidentifiserende opplysninger registreres. NB! Som hovedregel bør ikke direkte personidentifiserende opplysninger registreres sammen med det øvrige datamaterialet.
Hvordan oppbevares navnelisten/ koblingsnøkkelen og hvem har tilgang til den?		
Direkte personidentifiserende opplysninger oppbevares sammen med det øvrige materialet	Ja ○ Nei ●	
Hvorfor oppbevares direkte personidentifiserende opplysninger sammen med det øvrige datamaterialet?		

Oppbevares direkte personidentifiserbare opplysninger på andre måter?	Ja ○ Nei ●	
Spesifiser		
Hvordan registreres og oppbevares datamaterialet?	□ Fysisk isolert datamaskin tilhørende virksomheten □ Datamaskin i nettverkssystem tilhørende virksomheten □ Datamaskin i nettverkssystem tilknyttet Internett tilhørende virksomheten □ Fysisk isolert privat datamaskin □ Privat datamaskin tilknyttet Internett □ Videoopptak/fotografi ■ Lydopptak ■ Notater/papir ■ Annen registreringsmetode	Merk av for hvilke hjelpemidler som benyttes for registrering og analyse av opplysninger. Sett flere kryss dersom opplysningene registreres på flere måter.
Annen registreringsmetode beskriv	Der blir ikke registrert personnumre eller andre direkte personidentifiserende opplysninger om informantene. Deres stemmer på bånd er det eneste som ville kunne direkte henføres til personer. De bånd blir oppbevart i et avlåst, sikkert skap på UiO.	
Behandles lyd-/videoopptak og/eller fotografi ved hjelp av datamaskinbasert utstyr?	Ja ● Nei ○	Kryss av for ja dersom opptak eller foto behandles som lyd-/bildefil. Les mer om behandling av lyd og bilde.
Hvordan er datamaterialet beskyttet mot at uvedkommende får innsyn?	Oppbevares på et sikkert, password beskyttet område på UiOs server.	Er f.eks. datamaskintilgangen beskyttet med brukernavn og passord, står datamaskinen i et låsbart rom, og hvordan sikres bærbare enheter, utskrifter og opptak?
Dersom det benyttes mobile lagringsenheter (bærbar datamaskin, minnepenn, minnekort, cd, ekstern harddisk, mobiltelefon), oppgi hvilke	Bærbar datamaskin, password beskyttet, mens interviews står på. Overføres til det sikre, password beskyttede område på UiOs server umiddelbart etter.	NB! Mobile lagringsenheter bør ha mulighet for kryptering.
Vil medarbeidere ha tilgang til datamaterialet på lik linje med daglig ansvarlig/student?	Ja ● Nei ○	
Hvis ja, hvem?	Karin Svensberg stipendiat og med-veileder vil have adgang på lik linje med ansvarlig og student.	
Overføres personopplysninger ved hjelp av e-post/Internett?	Ja ○ Nei ●	F.eks. ved bruk av elektronisk spørreskjema, overføring av data til samarbeidspartner/databehandler mm.
Hvis ja, hvilke?		
Vil personopplysninger bli utlevert til andre enn prosjektgruppen?	Ja ○ Nei ●	
Hvis ja, til hvem?		
Samles opplysningene inn/behandles av en databehandler?	Ja ○ Nei ●	Dersom det benyttes eksterne til helt eller delvis å behandle personopplysninger, f.eks. Questback, Synovate MMI, Norfakta eller transkriberingsassistent eller tolk, er dette å betrakte som en databehandler. Slike oppdrag må kontraktsreguleres Les mer om databehandleravtaler her
Hvis ja, hvilken?		
12. Vurdering/godkjenning fra andre instanser		
Søkes det om dispensasjon fra taushetsplikten for å få tilgang til data?	Ja ○ Nei ●	For å få tilgang til taushetsbelagte opplysninger fra f.eks. NAV, PPT, sykehus, må det søkes om

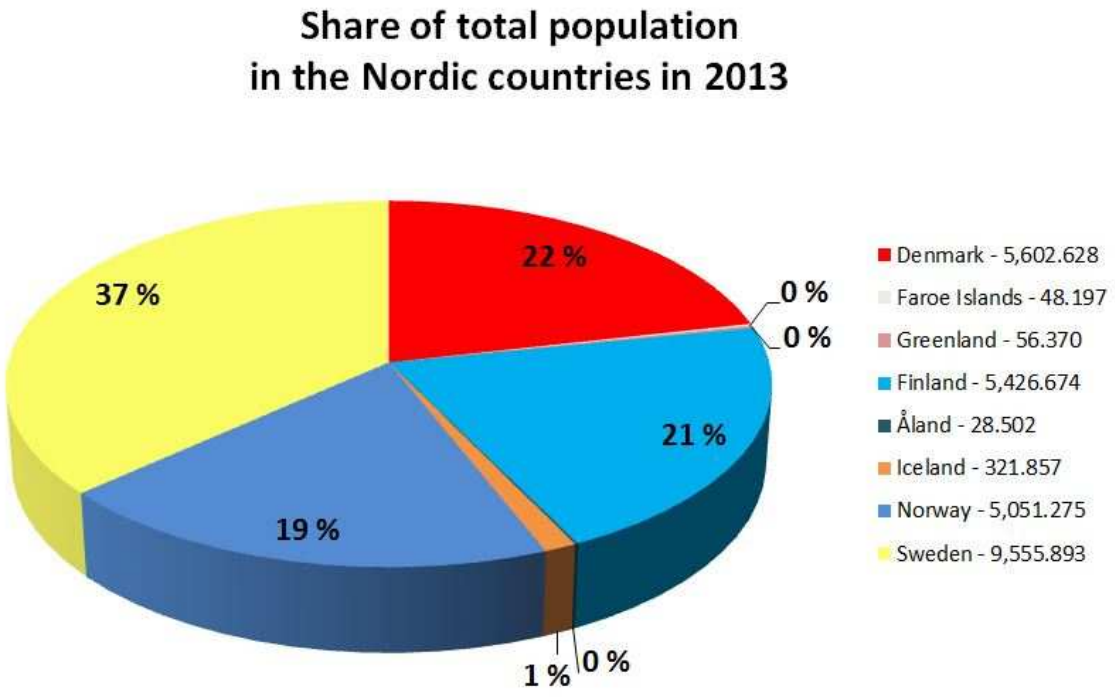
Kommentar		dispensasjon fra taushetsplikten. Dispensasjon søkes vanligvis fra aktuelt departement. Dispensasjon fra taushetsplikten for helseopplysninger skal for alle typer forskning søkes Regional komité for medisinsk og helsefaglig
Søkes det godkjenning fra andre instanser?	Ja ○ Nei ●	F.eks. søke registereier om tilgang til data, en ledelse om tilgang til forskning i virksomhet, skole, etc.
Hvis ja, hvilke?		
13. Prosjektperiode		
Prosjektperiode	Prosjektstart:04.05.2014 Prosjektslutt:31.01.2015	Prosjektstart Vennligst oppgi tidspunktet for når førstegangskontakten med utvalget opprettes og/eller datainnsamlingen starter. Prosjektslutt Vennligst oppgi tidspunktet for når datamaterialet enten skal anonymiseres/slettes, eller arkiveres i påvente av oppfølgingsstudier eller annet. Prosjektet anses vanligvis som avsluttet når de oppgitte analyser er ferdigstilt og resultatene publisert, eller oppgave/avhandling er innlevert og sensurert.
Hva skal skje med datamaterialet ved prosjektslutt?	■ Datamaterialet anonymiseres □ Datamaterialet oppbevares med personidentifikasjon	Med anonymisering menes at datamaterialet bearbeides slik at det ikke lenger er mulig å føre opplysningene tilbake til enkeltpersoner.NB! Merk at dette omfatter både oppgave/publikasjon og rådata. Les mer om anonymisering
Hvordan skal datamaterialet anonymiseres?	Data blir anonymisert i transkriberingen. Lydfilene blir destruert ved prosjektslutt.	Hovedregelen for videre oppbevaring av data med personidentifikasjon er samtykke fra den registrerte. Årsaker til oppbevaring kan være planlagte oppfølgningsstudier, undervisningsformål eller annet. Datamaterialet kan oppbevares ved egen institusjon, offentlig arkiv eller annet. Les om arkivering hos NSD
Hvorfor skal datamaterialet oppbevares med personidentifikasjon?		
Hvor skal datamaterialet oppbevares, og hvor lenge?		
14. Finansiering		
Hvordan finansieres prosjektet?	Der behøves ikke ekstern finansiering. Dette er et master-prosjekt, uten behov for reiser.	
15. Tilleggsopplysninger		
Tilleggsopplysninger		
16. Vedlegg		
Antall vedlegg	2	

Appendix 7. Executive Summary about the Nordic countries-

Executive Summary about the Nordic countries

Figure 1.The Nordic countries are situated in the northern part of Europe.

The Nordic countries refer to the following countries: Norway, Sweden, Denmark, Finland and Iceland. The share a common well-fare ideology and the Nordic health care model is based on a principle of free and equal access for all citizens. In the summary the focus is on Norway ,which is described in detail, and brief summaries are given on the other countries.



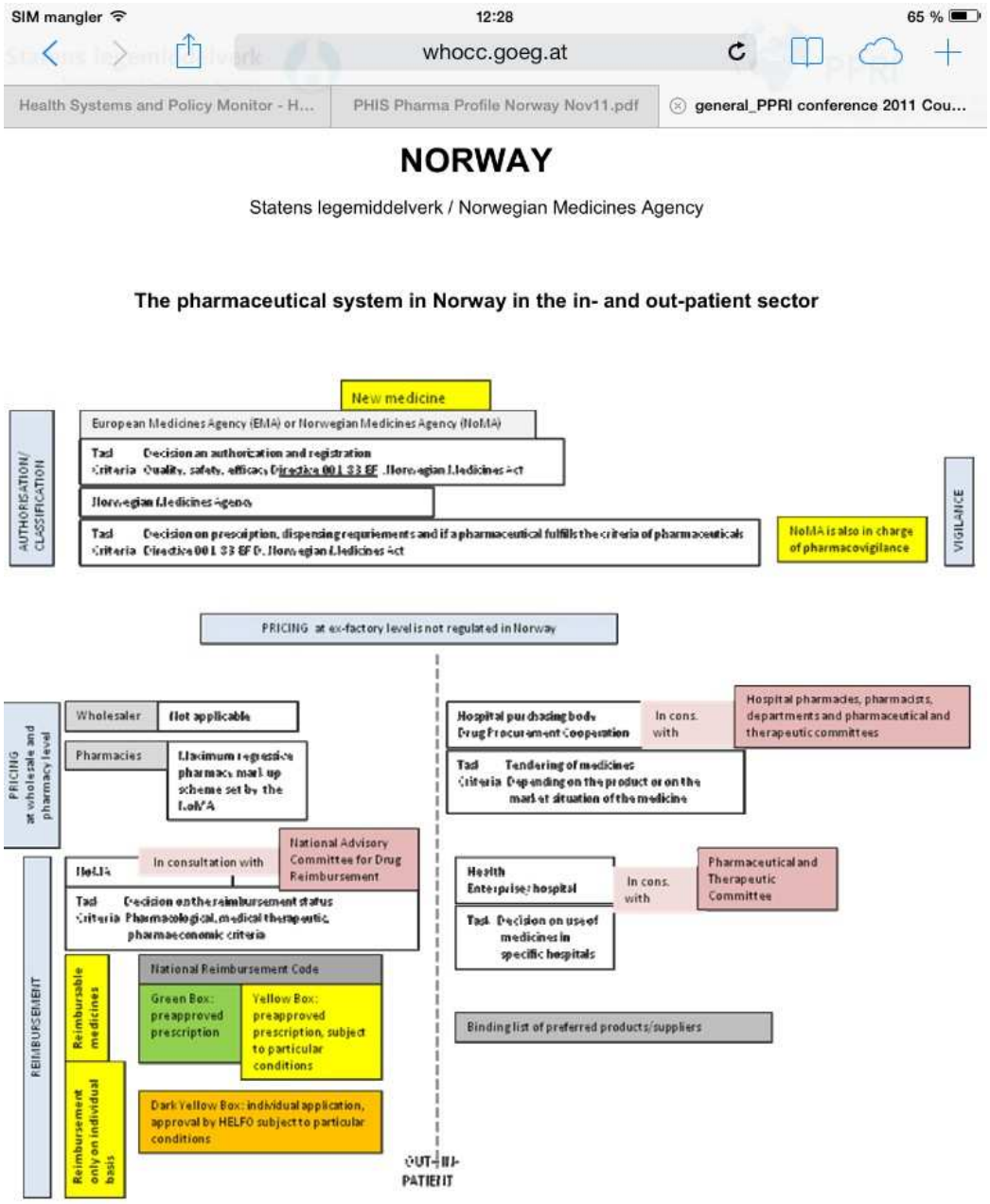
(http://en.wikipedia.org/wiki/File:Share_of_total_population_in_the_Nordic_countries_in_2013.JPG, 2013)

Figure 2.Shre of total population in the Nordic countries from 2013.

1. Norway

The figure illustrates a chart for pharmaceutical system in Norway. Thereafter the system is described in more detail.

Figure.3 A chart for pharmaceutical system in Norway (se web link below)



Source:Whttp://whocc.goeg.at/Downloads/Conference2011/PraesentationenPPRIKonferenz/general_PPRI%20conference%202011%20Country%20poster%20book.pdf (http://whocc.goeg.at/Downloads/Conference2011/PraesentationenPPRIKonferenz/general_PPRI%20conference%202011%20Country%20poster%20book.pdf, 2011) .

The health care system

The principle of equality in health, both social and geographical, is central when it comes to forming Norwegian health policy. The Norwegian health care system is

founded on the principles of universal access, decentralisation and free choice of provider. It is financed by taxation, together with income-related employee and employer contributions and out-of-pocket payments (co-payments). All residents are covered by the National Insurance Scheme (Folketrygden, NIS), managed by the Norwegian Health Economics Administration (Helseøkonomiforvaltningen, HELFO). Private medical insurance is limited. While health care policy is controlled centrally, responsibility for the provision of health care is decentralised. Local authorities at municipal level organise and finance primary health care services according to local demand. The central Government has overall managerial and financial responsibility for the hospital sector. Norway's four regional health authorities control the provision of specialised health services by 27 health enterprises.

The pharmaceutical system

The Ministry of Health and Care Services (Helse- og omsorgsdepartementet, HOD) is the legislative authority. The Norwegian Medicines Agency (Statens legemiddelverk, NoMA) (subordinate to the HOD) is in charge of market authorisation, classification, vigilance, pricing, reimbursement and providing information on pharmaceuticals to prescribers and the public. HELFO decides on reimbursement for individual patients for pharmaceuticals not included in the general pharmaceutical reimbursement or indications not covered by general reimbursement. HELFO also monitors the prescriptions issued by outpatient doctors.

All major international pharmaceutical companies are represented by marketing's office in Norway, but only very few of them have established their own manufacturing units in the country. In Norway there are three wholesalers providing a full range of products to the market, belonging to the leading European pharmaceutical distribution companies:

• Norsk Medisinaldepot (NMD), owned by Celesio AG , with a market share of 47,6 %;

• Apotek 1 AS, owned by Tamro OYJ, with a market share of 28,9 %;

• Boots Norge AS, owned by Alliance Boots Plc with a market share of 23,7 %.

Each of the wholesalers is vertically integrated with their own pharmacy chain.

• Only community and hospital pharmacies are allowed to dispense prescription medicines. Of the 674 pharmacies there are 33 public hospital pharmacies. There are approximately 7,300 inhabitants per pharmacy (4.9 Mio. inhabitants). In addition pharmaceuticals are dispensed by small outlets belonging to the pharmacies.

Grocery stores, gasoline stations e.g. are allowed to distribute a restricted list of over-the -counter.

Pricing

The Norwegian Medicines Agency (NoMA) is responsible for setting maximum pharmacy purchase prices . All suppliers of prescription pharmaceuticals must apply for a maximum price, whether or not they are seeking reimbursement for the product. Pharmaceuticals can only be sold at or below the maximum price level. An international price referencing system has been used since July 2002 to set maximum prices for both new and existing pharmaceuticals. Prices are based on the average of the three lowest pharmacy purchasing prices in Austria, Belgium, Denmark, Finland, Germany, Ireland, the Netherlands, Sweden and the United Kingdom. If a pharmaceutical is marketed in fewer than three of the reference countries, the mean price is taken of the countries where a market price exists. Because pack sizes in different countries are not always directly comparable, price comparisons are made on the basis of units, e.g. price per tablet/dose. Local currency prices must be converted into Norwegian currency NOK, using the mean exchange rate of the last six whole months, as presented by the Bank of Norway. Wholesalers are free to negotiate mark-ups with manufacturers because the NoMA sets prices at the pharmacy purchasing price level. Mark-ups for generics and over-the-counter products are significantly higher than for branded pharmaceuticals. Pharmacy mark-ups for prescription products (both reimbursed and non-reimbursed) are fixed at 7% for pharmaceuticals with a pharmacy purchasing price (PPP) up to NOK 200 / € 25.5, and at 4% of the price above NOK 200 / € 25.5. There is also a flat rate add-on of NOK 22.00 / € 2.8 per pack, plus value-added tax (VAT) (25%). An additional flat rate add-on of NOK 10 / € 1.3 is applied to addictive products (narcotic and psychotropic substances). Mark-ups on OTC are not regulated.

Generic prices cannot exceed the maximum market price of the original branded product. A price model called the stepped price model (Trinnprismodellen) came into effect in January 2005. Under this scheme, a maximum reimbursement price is set for affected pharmaceuticals (both branded and generics). The maximum reimbursement price level is automatically reduced in stages (steps) following patent expiry. The size of the price cuts depends on annual sales prior to the establishment of generics competition and time since competition was established.

Reimbursement

Reimbursement decisions are made by the Norwegian Medicines Agency (NoMA). The pharmaceutical companies need to follow the Norwegian guidelines for pharma economic evaluations when applying for reimbursement.

Generally speaking the Norwegian reimbursement system may be characterised as disease and consumption based. Whether a pharmaceutical is reimbursed and the amount of reimbursement depends on the following criteria:

• The illness must be considered serious and chronic, for which long-term medication (more than three months per year) is necessary;

• The annual consumption and cost for the patient (no co-payment above an annual ceiling of NOK 2,105 / € 257,40; in 2014 ;card scheme uses. This card covers approved user fees for pharmaceuticals and for treatment by a doctor, a psychologist, in outpatient clinics and x-ray institutes.

• Low income pensioners and children under 16 are exempt from co-payment.

Pharmaceuticals are grouped into four reimbursement categories (Schedule numbering is depending on law paragraphed which mean §2,§3a,§3b and §4. Number one is not relevant and not mentioned)

• Schedule 2 (§2): General reimbursement• Schedule 3a and 3b(§3a and §3b): Reimbursement on a named patient basis. Reimbursement is granted upon submission of an individual patient application.

• Schedule 4(§4): Reimbursement of pharmaceuticals used to treat serious contagious diseases such as tuberculosis, syphilis or HIV/AIDS.100% reimbursement.

The standard patient co-payment for reimbursed pharmaceuticals is 38% up to the annual ceiling (see above). All expenses above this threshold are covered by the National Insurance Scheme. The annual limit also includes co-payments for physician consultations, laboratory tests, radiography, etc.

Inpatient pharmaceuticals are covered by the public hospitals. In Norway, hospital pharmaceuticals are covered by the hospital budget. There are pharmaceutical and therapeutic committees established by the hospitals which set up and decide on inclusion of medicines to the hospital pharmaceutical formulary for internal use. No countrywide medicines lists for in-patient care exist (for more information see: (http://whocc.goeg.at/Publications/CountryReports, 2014).

The other Nordic countries

The healthcare systems for the other Nordic countries are in principle similar to the Norwegian one, with minor differences that in the following are described country by country

2. Swedish

In Sweden ,pricing and reimbursement decision on pharmaceuticals is decided by Swedish national authorities. The Medical product agency (Läkemedelsverket, MPA) and the Pharmaceutical Benefit Board (Läkemedelsförmånsnämnden, LFN). They **do not** use the International reference pricing but their descion are rather based on health economic evaluations.

Pharmacies in Sweden

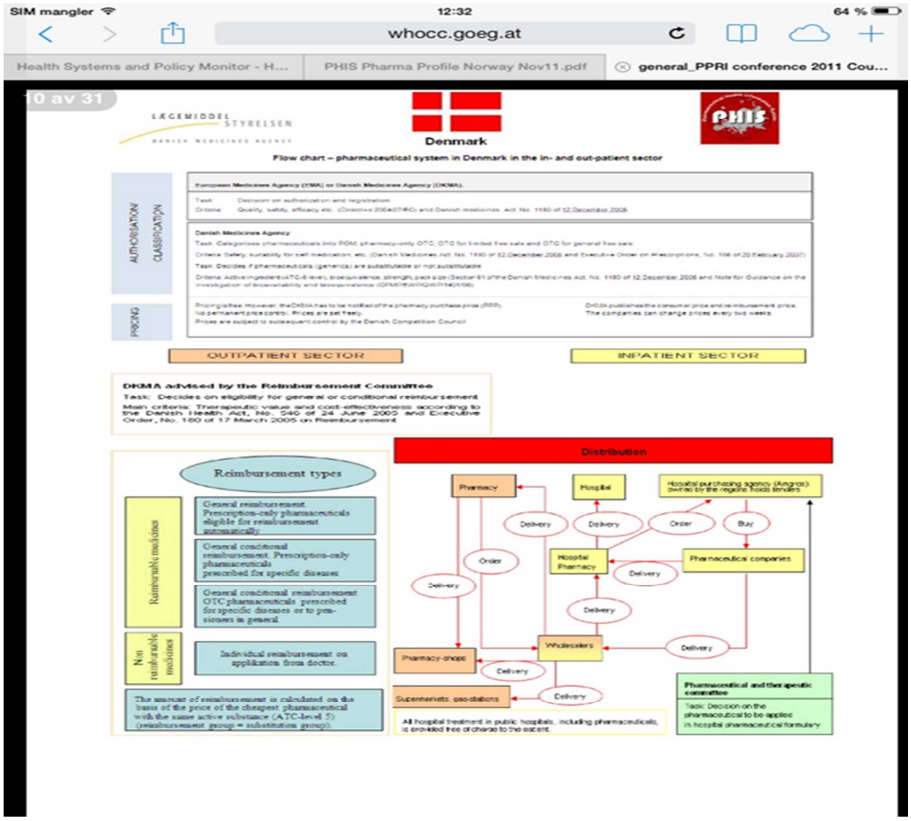
For almost four decades, Sweden was one of few countries in the world with a government run monopoly of pharmacies, banning private retail (pharmacist ownership pr pharmacy chains) of pharmaceuticals. When a new centre-right government was elected in 2006, one of its promises was to abolish the monopoly and sell of most of the state-owned pharmacies. This plan was put into action in 2009. Private competition was allowed in late 2009, and a majority of the government-owned pharmacies were rebranded during January and February 2010 as they were transferred to new owners. The newly privatized pharmacies have been grouped into five new chains. There were also a few actors that have entered the market without acquiring any state-owned pharmacies, but many of them quickly realized that the prospects of reaching profitability were bleak. Before privatization, all 945 pharmacies in the country were operated by one state-owned company, Apoteket AB. 615 of them were sold, while 330 stayed with Apoteket AB. "Apoteket" means "The Pharmacy", and Apoteket AB holds a trademark on the definite form of the Swedish word for pharmacy ("Apoteket"), while the indefinite form ("apotek") can be used by anyone. Hence, almost all new entrants have included the word "apotek" in their name. They have also gone for remarkably similar visual adenitis, with most of them using green as signature colour and some variation of a green cross as their symbol (http://brandingsource.blogspot.no/2011/07/swedish-pharmacies.html, 2014)

3. Denmark

In Denmark, there is a National health insurance system which depending on two types of reimbursement :general reimbursement and individual reimbursement, both of them are decided by the Danish Medicines Agency .In Denmark, there is a

relationship between the size of reimbursement and the patient's total annual expenditure for reimbursable pharmaceuticals, age and reimbursement threshold .Variation between 50%, 60%, 75%, 85% and 100%. Se web link for more information's http://sundhedsstyrelsen.dk/en/medicines/reimbursement/reimbursement-thresholds . According to (http://whocc.goeg.at/Publications/CountryReports, 2014).

Figure. 4 A chart for pharmaceutical system in Denmark (se web link below)



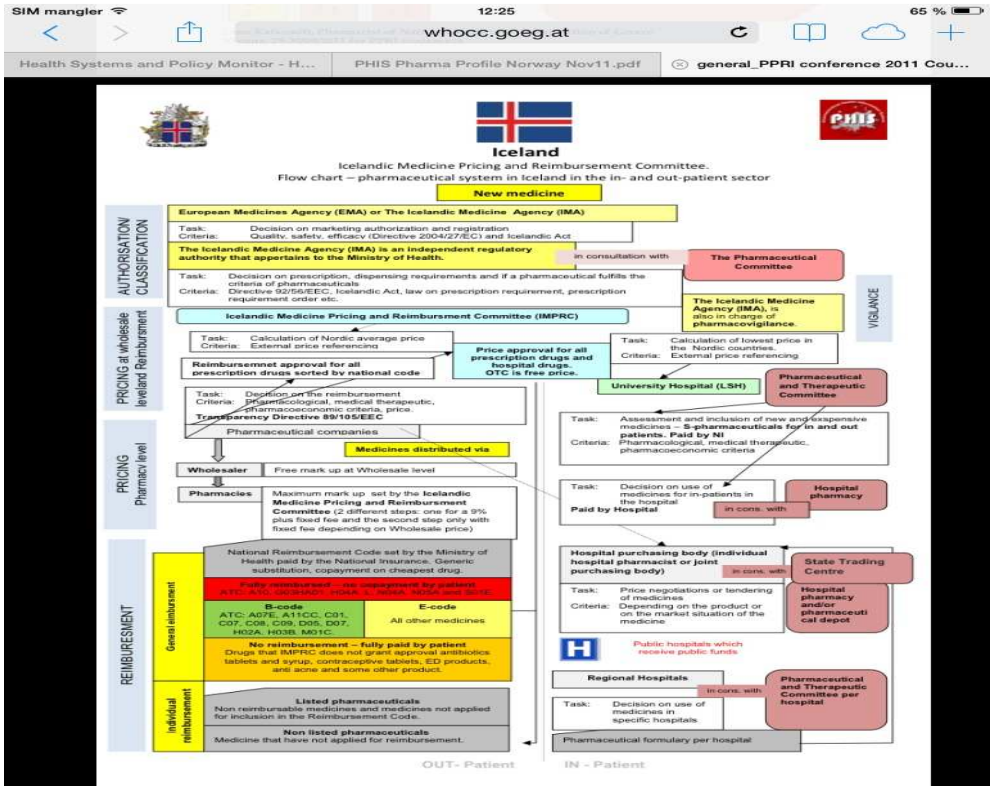
http://whocc.goeg.at/Downloads/Conference2011/PraesentationenPPRIKonferenz/general_PPRI%20conference%202011%20Country%20poster%20book.pdf.

4. Iceland

The parliament in Iceland passes legislations concerning the national health insurance, and the ministry of welfare builds 0n these when deciding on co-payment structure. The main goal of a new act, passed in 2012, is to increase equality between individuals, regardless of diseases, and reduce medicinal costs for those having to use a lot of medicinal products. The pharmaceutical co-payment system in Iceland is construct red around stepwise co-payment, where each individual pays proportionally less as his or her costs because of medicinal products increase during a 12-month period. In the first step an individual pays the full cost of a medicinal product; in the second step 15% of the cost of medicines and in the third step 7.5%.

When the cost of medicines reaches a certain maximum, a doctor can apply to the National Health Insurance to fully pay the costs of medicine for the remainder of the period, after specified conditions are fulfilled. All of the medicines entitled to(Icelandic health insurance, SÍ)'s contributions to the payment of (including medicines an individual has gotten approved medicinal product certificates for) will be included in the payment steps. The medicinal products that SÍ does not contribute to paying, fall outside the payment stepsister the web link for more information's:
http://www.sjukra.is/english/social-insurance-in-iceland/medicinal-products/

Figure.5 A chart for pharmaceutical system in Iceland (se web link below)



Source:
http://whocc.goeg.at/Downloads/Conference2011/PraesentationenPPRIKonferenz/general_PPRI%20conference%202011%20Country%20poster%20book.pdf.

5. Finland

In Finland ,the Pharmaceutical pricing Board is the decision maker for pricing ,they use the international pricing system and working under the Ministry for Social Affairs and Health. The reimbursement system comprises three reimbursement categories: the basic refund category (with 42% of the full price reimbursed) and the lower and higher special reimbursement categories (72% and 100% reimbursed, respectively). The categories are set according to the severity of the treated condition and the

necessity of the drug treatment. A total of ten conditions are included in the lower category and 34 in the higher category. If a patient's medicine expenses exceed a pre-set amount in a calendar year (€675.39 in 2011), the patient pays a fixed non-reimbursable sum of 1.50 € for each reimbursable medicinal product purchased. (http://whocc.goeg.at/Publications/CountryReports, 2014).

References

http://en.wikipedia.org/wiki/File:Share_of_total_population_in_the_Nordic_countries_in_2013.JPG. (2013). The population of Nordic countries.

http://whocc.goeg.at/Downloads/Conference2011/PraesentationenPPRIKonferenz/general_PPRI%20conference%202011%20Country%20poster%20book.pdf. (2011). PPR Conferance 2011 Country Poster book.

http://whocc.goeg.at/Publications/CountryReports. (2014).

http://www.sjukra.is/english/social-insurance-in-iceland/. (2014). Insurance in Iceland.

Pedersen, K. M. (2003). Pricing and reimbursement of drugs in Denmark. *The European Journal of Health Economics, 4*(1), 60-65.